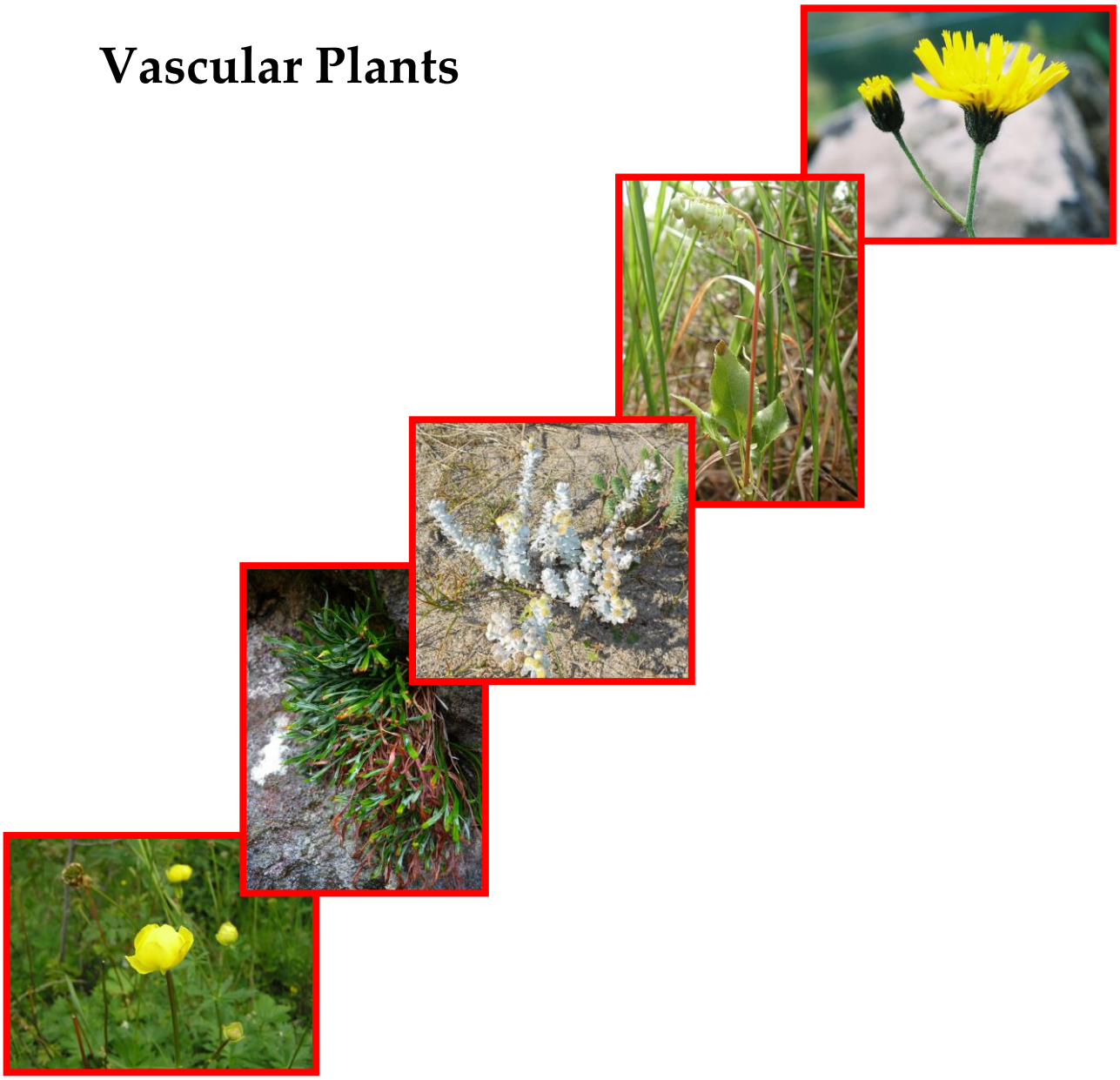
Ireland

Red List No. 10

THE IUCN RED LIST
OF THREATENED SPECIES™

Vascular Plants



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Ireland Red List No. 10:

Vascular Plants

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Cover photos, from top (photographer): *Hieracium hartii* (Tim Rich), *Orthilia secunda* (Neil Lockhart), *Achillea maritima* (Michael Wyse Jackson), *Asplenium septentrionale* (Neil Lockhart), *Trollius europaeus* (John Conaghan).

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EXECUTIVE SUMMARY

This report contains the vascular plant Red List for Ireland. The threat status of native and archaeophyte (pre-1500 introductions) vascular plant species, subspecies and certain hybrids recorded from the wild on the island of Ireland is assessed, following current International Union for the Conservation of Nature (IUCN) categories and criteria, and guidelines for their application. Vascular plants introduced since 1500 (neophytes) are not assessed. Assessments are based on records up to 2014 assembled by a group representing government organisations and biodiversity data centres in both jurisdictions on the island, the Botanical Society of Britain & Ireland and the National Botanic Gardens, Glasnevin.

Since publication of *The Irish Red Data Book. 1 Vascular Plants* nearly 30 years ago, Ireland has undergone considerable economic, social and cultural changes, which have affected, to a greater or lesser degree, the distribution, extent and quality of the semi-natural and other habitats that support its vascular plant flora. At the same time, this period has seen unprecedented levels of recording and study of the Irish vascular plant flora, at a variety of scales (Ireland, regional, county, 10 km x 10 km grid square, site and population) and these data are fully availed of for the current Red List assessments.

In summary, a total of 1211 taxa, comprising 1047 species, 4 species aggregates, 157 subspecies and 3 interspecific hybrids, considered to be native, archaeophyte or of uncertain native/alien status in Ireland are assessed and, of these, 106 (8.8%) are assigned an IUCN Red List threat category: 20 (1.7%) are Critically Endangered, 25 (2.1%) are Endangered and 61 (5.0%) are Vulnerable; these comprise Ireland's Red-listed taxa. 15 taxa (1.2%) are Regionally Extinct, 98 (8.1%) are Near Threatened, 887 (73.2%) are Least Concern and 105 (8.7%) are assigned, for a variety of reasons, to a Waiting List of taxa for which assessments could not be made.

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INTRODUCTION

Background

The preparation of Red Lists which assess the threat status of species is a commitment in Ireland's National Biodiversity Plan for 2011–2016 (DAHG 2011). It is also one of Ireland's Global Strategy for Plant Conservation targets. Red List assessment provides information on the degree to which species are at risk of extinction and, by implication, those for which conservation measures need to be considered. The results of the Red List assessment contribute to the assessment of conservation status of habitats and sites, to the process of selecting sites requiring protection by designation and to the identification of taxa which require protection under the Flora (Protection) Order and Schedule 8 of the Wildlife (Northern Ireland) Order.

The vascular plants (comprising pteridophytes [ferns and fern allies] and flowering plants [gymnosperms and angiosperms]) were the first group of species for which an Irish Red List assessment was undertaken. This work, which assessed the threat status of vascular plants across the island of Ireland, resulted in the landmark publication, *The Irish Red Data Book. 1 Vascular Plants* (Curtis & McGough 1988). Since then, Ireland has undergone considerable economic, social and cultural changes, which have affected, to a greater or lesser degree, the distribution, extent and quality of the semi-natural and other habitats that support its vascular plant flora, and an up-to-date assessment of the status of its flora is required. This period has also seen unprecedented levels of recording and study of the Irish vascular plant flora, at a variety of scales (Ireland, regional, county, 10 km x 10 km grid square, site and population), and assessments to take account of these newly-acquired data are required. Re-assessment of the flora is also necessary in order to apply the revised IUCN Red List assessment criteria (IUCN 2001; 2012b; 2016a) including regional guidelines (IUCN 2003; 2012a), developed since the last assessment, to assign taxa to the appropriate revised Red List categories.

Since 2009, all-Ireland Red Lists have been published as part of a dedicated Irish Red List publication series by the National Parks and Wildlife Service of the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (and its predecessors) in collaboration with the Northern Ireland Environment Agency of the Department of Agriculture, Environment and Rural Affairs (and its predecessors). For these, Ireland is treated as a single biogeographic unit and records from all parts of the island are included. This report forms the 10th Red List produced for Ireland since 2009. See http://www.npws.ie/publications for other published Red Lists.

This report has been produced by a working group of representatives of the National Parks and Wildlife Service (NPWS), the Northern Ireland Environment Agency (NIEA), the National Botanic Gardens Glasnevin of the Office of Public Works, the National Biodiversity Data Centre, Waterford, the Centre for Environmental Data and Recording (CEDaR) and the Botanical Society of Britain & Ireland (BSBI). Dr Edwina Cole assisted with preparation of the report.

Legal protection

A number of vascular plants are afforded legal protection in Ireland under domestic and European law. Sixty-eight vascular plant taxa are protected in the Republic of Ireland under the Flora (Protection) Order, 2015 (Statutory Instrument No. 365 of 2015) – listed in Table 1 (nomenclature in this, and Tables 2 & 3 below, follows Stace (2011), with names used in the various legal instruments provided in parentheses). The list of vascular plants in this Order is the same as that on the Flora (Protection) Order, 1999 (Statutory Instrument No. 94 of 1999), the only changes to the lists of taxa included in the later Order relating to bryophytes.

Table 1. Vascular plant taxa listed on the Flora (Protection) Order, 2015

Scientific Name	Scientific Name
Achillea maritima (*Otanthus maritimus*)	*Hypericum hirsutum*
Allium schoenoprasum	*Inula salicina*
Alopecurus aequalis	*Lathyrus japonicus* subsp. *maritimus* (*Lathyrus japonicus*)
Arabidopsis petraea (*Cardaminopsis petraea*)	
Arenaria ciliata (*Arenaria ciliata* incl. subsp. *hibernica*)	*Limosella aquatica*
Asparagus prostratus (*Asparagus officinalis*)	*Lotus subbiflorus*
Asplenium obovatum subsp. *lanceolatum*	*Lycopodiella inundata*
Asplenium septentrionale	*Mentha pulegium*
Astragalus danicus	*Mertensia maritima*
Betonica officinalis (*Stachys officinalis*)	*Minuartia recurva*
Calamagrostis epigejos	*Misopates orontium*
Callitriche truncata	*Najas flexilis*
Cardamine impatiens	*Papaver hybridum*
Carex depauperata	*Persicaria vivipara* (*Polygonum viviparum*)
Carex divisa	*Pilularia globulifera*
Centaurium pulchellum	*Pseudorchis albida*
Cephalanthera longifolia	*Puccinellia fasciculata*
Clinopodium acinos (*Acinos arvensis*)	*Pyrola rotundifolia* subsp. *maritima*
Colchicum autumnale	*Sanguisorba officinalis*
Cryptogramma crispa	*Sarcocornia perennis* (*Arthrocnemum perenne*)
Deschampsia setacea	*Saxifraga granulata*
Epilobium alsinifolium	*Saxifraga hirculus*
Equisetum hyemale x *E. ramosissimum* = *E.* x *moorei* (*Equisetum* x *moorei*)	*Saxifraga nivalis*
	Saxifraga rosacea subsp. *hartii* (*Saxifraga hartii*)
Eriophorum gracile	*Schoenoplectus triqueter* (*Scirpus triqueter*)
Filago minima (*Logfia minima*)	*Scleranthus annuus*
Galeopsis angustifolia	*Simethis mattiazzii* (*Simethis planifolia*)
Gnaphalium sylvaticum (*Omalotheca sylvatica*)	*Spiranthes romanzoffiana*
Groenlandia densa	*Trichomanes speciosum*
Gymnocarpium robertianum	*Trifolium glomeratum*
Hammarbya paludosa	*Trifolium subterraneum*
Helianthemum nummularium	*Trollius europaeus*
Hordeum secalinum	*Vicia orobus*
Hydrilla verticillata	*Viola hirta*
Hypericum canadense	*Viola lactea*

Except under licence granted under Section 21 of the Wildlife Act, 1976, as amended by the Wildlife (Amendment) Act, 2000, none of the taxa listed on the Flora (Protection) Order, 2015 may be taken, damaged, kept, bought, sold or their habitat/environment wilfully altered, damaged, destroyed or otherwise interfered with. The Wildlife (Northern Ireland) Order 1985, as amended by the Wildlife and Natural Environment Act (Northern Ireland) 2011, affords a measure of protection to all wild plants, but sixty-nine species of vascular plant, listed on Schedule 8, Part 1, are given special protection (Table 2) – without a licence these plants may not be intentionally picked, uprooted, destroyed, sold, or have their seeds collected and sold. Two additional species are listed on Schedule 8, Part 2 (*Hyacinthoides non-scripta* and *Primula vulgaris*) and these are afforded similar protection to those on Part 1, but may be picked (by authorised persons only) without a licence.

Trichomanes speciosum and *Saxifraga hirculus*, which had been listed on Schedule 8, Part 1 of the Wildlife (Northern Ireland) Order 1985, were removed from this Schedule under regulation 40 of the Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2007 (S.R. 2007/345), their legal protection in Northern Ireland instead being provided by regulation 38 of this Statutory Rule.

These two species and a third Irish native, *Najas flexilis*, are listed on Annex IIb and IVb of the European Communities Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (the "E.U. Habitats Directive"). This Directive requires that Special Areas of Conservation (SACs) be designated for listed species and that appropriate actions be taken to ensure their future conservation – the great majority of Irish populations for these species are now contained within designated SACs. A fourth species listed on Annex IIb and IVb of the Directive, *Luronium natans*, also occurs in Ireland, but no SACs have been selected for this on account of uncertainties surrounding its native/alien status. Annex V of the Directive is concerned with exploitation and taking from the wild of certain species and the listing of "*Lycopodium* spp." on this (Annex Vb) covers four Irish vascular plant species, i.e. *Diphasiastrum alpinum*, *Huperzia selago*, *Lycopodiella inundata* and *Lycopodium clavatum*.

Table 2. Vascular plant taxa listed on Schedule 8, Part 1 (except as indicated) of the Wildlife (Northern Ireland) Order 1985, as amended by the Wildlife and Natural Environment Act (Northern Ireland) 2011

Scientific Name	Scientific Name
Adoxa moschatellina	*Hypochaeris glabra*
Ajuga pyramidalis	*Hypopitys monotropa* (*Monotropa hypopitys*)
Anacamptis morio (*Orchis morio*)	*Juniperus communis*
Andromeda polifolia	*Limonium binervosum*[3]
Artemisia maritima (*Seriphidium maritimum*)	*Limosella aquatica*
Calamagrostis epigejos	*Lycopodiella inundata*
Calamagrostis stricta	*Lycopodium clavatum*
Carex bigelowii	*Melampyrum sylvaticum*
Carex magellanica	*Mentha pulegium*
Carex pauciflora	*Mertensia maritima*
Centaurium littorale	*Neotinea maculata*
Ceratophyllum submersum	*Ophrys apifera*
Cirsium heterophyllum	*Ornithopus perpusillus*
Crambe maritima	*Orobanche hederae*
Cryptogramma crispa	*Orthilia secunda*
Cuscuta epithymum	*Polystichum lonchitis*
Dactylorhiza lapponica[1]	*Primula veris*
Dactylorhiza traunsteinerioides (*Dactylorhiza traunsteineri*)	*Primula vulgaris* [Schedule 8, Part 2 only]
Diphasiastrum alpinum	*Pseudorchis albida*
Dryas octopetala	*Ranunculus fluitans*
Eleocharis parvula	*Rhynchospora fusca*
Epipactis palustris	*Rubus chamaemorus*
Epipactis phyllanthes	*Sanguisorba officinalis*
Erica vagans	*Saussurea alpina*
Erigeron acris (*Erigeron acer*)	*Saxifraga aizoides*
Frangula alnus	*Saxifraga oppositifolia*
Gentianella amarella	*Scrophularia umbrosa*
Geranium pratense	*Silene acaulis*
Geranium sylvaticum	*Sisyrinchium bermudiana*
Gymnocarpium dryopteris	*Spiranthes romanzoffiana*
Hammarbya paludosa	*Teesdalia nudicaulis*
Hierochloe odorata	*Thalictrum alpinum*
Hottonia palustris	*Trollius europaeus*
Hyacinthoides non-scripta [Schedule 8, Part 2 only]	*Vicia orobus*
Hyoscyamus niger	*Viola persicifolia*
Hypericum hirsutum[2]	

[1]Irish plants identified as this are included under *Dactylorhiza traunsteinerioides* in Stace (2011).

[2]Recent rcords from Northern Ireland are considered to be erroneous or based on introduced plants/plants of uncertain native/alien status (Faulkner 2015; McNeill 2010; Northridge *et al*. 2014).

[3]The *Limonium binervosum* aggregate occurs in Ireland, but not *L. binervosum* in the strict sense (Ingrouille & Stace 1986; Stace 2011), and Northern Ireland records for this are likely to be referable to *L. procerum* – see Hackney (1992).

Priority species/Species Action Plans

The Wildlife and Natural Environment Act (Northern Ireland) 2011 introduced new provisions and amended the Wildlife (Northern Ireland) Order 1985 in order to reflect the increasing significance of protecting Northern Ireland's biodiversity. The Act required the publication of a list of species considered to be of importance for the conservation of biodiversity in Northern Ireland. The first published list used the *Northern Ireland Priority Species List* of 481 plant and animal species which was published in 2010 (see http://www.daera-ni.gov.uk/sites/default/files/publications/doe/northern-ireland-priority-species-list.pdf); sixty-eight of the listed species are vascular plants (see Table 3 below and associated species accounts at http://www.habitas.org.uk/priority/splist.asp?Type=Vascular%20Plants). The *Northern Ireland Priority Species List* forms the basis for the selection of species for which Species Action Plans may be required for their conservation in Northern Ireland, and such plans were published for several of these in 2005 (*Geranium pratense*, *Geranium sylvaticum, Melampyrum sylvaticum, Ranunculus fluitans* and *Sisyrinchium bermudiana*), 2006 (*Hypopitys monotropa* and *Orthilia secunda*) and 2008 *(Gnaphalium sylvaticum, Juniperus communis* and *Viola persicifolia*) – see http://www.daera-ni.gov.uk/publications. In the Republic of Ireland, Species Action/Protection/Threat Response Plans are produced periodically as required under the National Biodiversity Plan (DAHG 2011; DAHGI 2002). All-Ireland Species Action Plans have been published for two vascular plant species: *Spiranthes romanzoffiana* (in 2005) and *Trichomanes speciosum* (2008) – see http://www.npws.ie/publications/species-action-plans. In addition, UK priority species occurring in Northern Ireland are included on the *Northern Ireland Priority Species List* and UK Biodiversity Action Plans for several of these have been published, including *Fumaria purpurea* (in 1998), *Juniperus communis* (1999), *Lycopodiella inundata* (1998), *Mentha pulegium* (1998), *Saxifraga hirculus* (1995), *Sium latifolium* (1998) and *Trichomanes speciosum* (1995) – see http://jncc.defra.gov.uk/PDF/UKBAP_Tranche2-ActionPlans-Vol1-1998.pdf, http://jncc.defra.gov.uk/PDF/UKBAP_Tranche2-ActionPlans-Vol3-1999.pdf and http://www.habitas.org.uk/priority/splist.asp?Type=Vascular%20Plants.

Table 3. Vascular plant taxa listed on the Northern Ireland Priority Species List

Scientific Name	Scientific Name	Scientific Name
Adoxa moschatellina	*Frangula alnus*	*Polystichum lonchitis*
Ajuga pyramidalis	*Fumaria purpurea*	*Pseudorchis albida*
Andromeda polifolia	*Galium uliginosum*	*Pyrola media*
Calamagrostis epigejos	*Gentianella campestris*	*Ranunculus fluitans*
Calamagrostis stricta	*Geranium pratense*	*Rubus chamaemorus*
Carex elongata	*Geranium sylvaticum*	*Ruppia cirrhosa*
Carex pauciflora	*Gnaphalium sylvaticum*	*Sagina subulata*
Centaurium littorale	*Helminthotheca echioides*	*Salix myrsinifolia*
Centunculus minimus	(*Picris echioides*)	*Salsola kali* subsp. *kali*
(*Anagallis minima*)	*Hierochloe odorata*	*Sanguisorba officinalis*
Ceratophyllum submersum	*Hottonia palustris*	*Saxifraga hirculus*
Cirsium heterophyllum	*Hypochaeris glabra*	*Scleranthus annuus*
Cochlearia officinalis subsp. *scotica*	*Hypopitys monotropa* (*Monotropa hypopitys*)	*Silene gallica*
(*Cochlearia officinalis scotica*)	*Juniperus communis*	*Sisyrinchium bermudiana*
Coeloglossum viride	*Ligusticum scoticum*	*Sium latifolium*
Crambe maritima	*Luzula pallescens (Luzula pallidula)*	*Sorbus hibernica*
Cryptogramma crispa	*Lycopodiella inundata*	*Sorbus rupicola*
Eleocharis parvula	*Melampyrum sylvaticum*	*Spiranthes romanzoffiana*
Epipactis phyllanthes	*Mentha pulegium*	*Stellaria palustris*
Erica vagans	*Mertensia maritima*	*Teesdalia nudicaulis*
Erigeron acris (*Erigeron acer*)	*Neotinea maculata*	*Trichomanes speciosum*
Euphrasia officinalis subsp. *anglica*	*Oenanthe fistulosa*	*Trollius europaeus*
(*Euphrasia anglica*)	*Orthilia secunda*	*Vicia lathyroides*
Euphrasia salisburgensis	*Platanthera bifolia*	*Viola persicifolia*

METHODOLOGY FOR DEVELOPMENT OF THE RED LIST

Nomenclature

The nomenclature of vascular plants in this Red List follows Stace (2011), the 2011 reprint (which includes corrections and minor updates) of the 3rd edition of his authoritative and comprehensive flora (Stace 2010). Authorities for names of taxa are not provided in the Red List except where a taxon is not listed in Stace (2011), or for clarification purposes. The abbreviation of author names for taxa not included in Stace (2011) follows the International Plant Names Index (IPNI 2016). For taxon names that have changed recently and which may thus be unfamiliar, earlier names in common use are noted. Details of changes in nomenclature that occurred between the 2nd and 3rd editions of Stace's flora (Stace 1997; 2010) and between the 3rd edition and the 3rd edition reprint are to be found in Ellis & Pearman (2010) and in Stace (C.A. (2011) *New flora of the British Isles*, edition 3 (2010): first reprint (2011). *BSBI News* **118**: 8–9), respectively.

Taxonomic coverage

Status

Included in the Red List are all native and archaeophyte (plants introduced by humans, deliberately or accidentally, before AD 1500) vascular plant species and subspecies confirmed as occurring in the wild in Ireland between 1800 and 2014. Taxa below the rank of subspecies are not included, following the approach taken in other recent vascular plant Red Lists – Cheffings & Farrell (2005), Dines (2008) and Stroh *et al*. (2014); the inclusion of archaeophytes along with native taxa and the exclusion of neophytes (plants introduced by humans, deliberately or accidentally, after AD 1500) also follows the approach taken by these authors. The taxonomic treatment of taxa on the Red List follows Stace (2011), in that species and subspecies recognised in that work are included while taxa of lower taxonomic rank are not.

Checklist compilation

A checklist of native, archaeophyte, neophyte, uncertain status and hybrid vascular plant taxa recorded from Ireland was compiled by Matthew Jebb at the National Botanic Gardens, Glasnevin – see http://www.botanicgardens.ie/herb/census/syno.xls (Jebb 2014) and the status of taxa provided there was followed for the identification of native and archaeophyte taxa to be assessed (other than the few exceptions noted below in the Red List table comments column). Lists of neophyte, hybrid and other taxa that are not included here for assessment may be found in Jebb (2014). Additional native or archaeophyte taxa were identified from Botanical Society of Britain and Ireland records (with permission) [see http://bsbi.org/maps for distribution maps], and from various published sources, such as Parnell & Curtis (2012), Preston *et al*. (2002), Sell & Murrell (1996; 2006; 2009; 2014), Stace (2011), Stace *et al*. (2015), Stroh *et al*. (2015) and Webb *et al*. (1996), amongst others, and these were added to the Red List for assessment or noted there, as appropriate.

Apomicts

Apomictic taxa are those in which seeds (or in ferns, new plants), wholly female in origin, are produced without fertilisation (Stace 2011). All Irish apomictic vascular plant taxa currently recognised at the ranks of species or subspecies are included for assessment, other than non-endemic taxa in the three genera, *Hieracium*, *Rubus* and *Taraxacum*, which are assessed collectively as species aggregates; separate assessments are, however, made for the nine endemic apomictic species recognised in these genera. The *Ranunculus auricomus* complex in Ireland awaits an up-to-date taxonomic review and such taxa as may occur within this have not been included; the *Flora Nordica* treatment of the *R. auricomus* complex (Ericsson 2001) recognises 605 "microspecies"!

Hybrids

Many hybrid taxa have been recorded from Ireland – see http://bsbi.org/maps, Jebb (2014), Praeger (1951), Scannell & Synnott (1987), Stace (1975) and the comprehensive publication of

Stace *et al*. (2015); however, the levels of recording of most of these over the years are such that there are insufficient data on distribution, locations, population sizes and trends to enable robust assessments to be undertaken, and hybrid taxa, with three notable exceptions, are not assessed here. These three, *Circaea* x *intermedia*, *Equisetum* x *moorei* and *Potamogeton* x *bottnicus*, are naturally-occurring interspecific hybrids that are of particular interest for the fact that, in each case, only one of the parent species of the hybrid combination is known to occur in Ireland.

The final checklist of taxa compiled for Red List assessment included 1211 species, species aggregates, subspecies and hybrids.

Geographical coverage

This Red List assessment of vascular plants was carried out for the island of Ireland (covering both Northern Ireland and the Republic of Ireland), a single list for the biogeographic unit being considered the most practical approach for the application of IUCN criteria. This is the standard practice for other Irish Red Lists. Separate lists of taxa of conservation concern, or taxa requiring conservation actions, can be compiled from the all-island Red List by the relevant authorities as necessary, taking into account policy factors that may operate differently within the two jurisdictions.

Data and data sources

Validated hectad (10 km x 10 km Irish National Grid square) scale records from the BSBI Vascular Plant Database (VPDb) were provided by the BSBI, with permission for their use in the Red List project, and these were used as a basis for the analysis of decline under IUCN criterion A. Use of this dataset enabled the comparison of data collected during two major recording projects which surveyed and mapped the flora of the Ireland, and which resulted in the publications, the *Atlas of the British Flora* (Perring & Walters 1962) and the *New Atlas of the British and Irish Flora* (Preston *et al*. 2002). The two time periods chosen for comparison and for calculation of declines under criterion A were 1930–1969 and 1987–1999, which equate to BSBI VPDb date classes 1 and 3; use of the VPDb and these two time periods for calculation of declines under criterion A follow the approaches taken in other recent vascular plant Red Lists – Cheffings & Farrell (2005), Dines (2008) and Stroh *et al*. (2014).

In order not to skew the results of the analyses, known records of neophyte occurrences of the following native/archaeophyte taxa were removed from the dataset (or in a few cases were left in and accounted for during the assessment of results stage): *Adiantum capillus-veneris, Adoxa moschatellina, Agrostemma githago, Alchemilla alpina, Allium schoenoprasum, A. vineale, Anthemis arvensis, Aquilegia vulgaris, Arbutus unedo, Artemisia maritima, Asplenium septentrionale, A. viride, Betonica officinalis, Calamagrostis epigejos, Campanula trachelium, Cardamine impatiens, Centaurea cyanus, Cirsium heterophyllum, Cochlearia danica, Cornus sanguinea, Euphorbia hyberna, Geranium columbinum, G. pratense, G. pusillum, G. rotundifolium, G. sanguineum, G. sylvaticum, Gymnocarpium dryopteris, G. robertianum, Hordeum secalinum, Hottonia palustris, Hypericum hirsutum, Inula salicina, Leucojum aestivum, Linaria vulgaris, Linum bienne, Meconopsis cambrica, Mentha pulegium, Mercurialis perennis, Origanum vulgare, Potentilla fruticosa, Primula veris, Prunus*

padus, Salix myrsinifolia, Salvia verbenaca, Sanguisorba officinalis, Saxifraga granulata, S. hirsuta, Sibthorpia europaea, Sorbus aria, Trifolium subterraneum, Viola odorata and *Wahlenbergia hederacea*. Where neophyte records comprised only a very small proportion of the total number of records of a taxon and which would not have a significant influence on the results, these were not removed. Reynolds (2002) provides a useful appendix of native species for which there are also records of alien occurrences in Ireland. Records of infraspecific taxa were amalgamated with records of the relevant parent subspecies/species prior to the analyses, other than those of neophyte infraspecific taxa, such as *Allium ampeloprasum* var. *ampeloprasum, Beta vulgaris* subsp. *cicla* and subsp. *vulgaris, Brassica rapa* subsp. *oleifera* and subsp. *rapa, Lamiastrum galeobdolon* subsp. *argentatum, Lotus corniculatus* var. *sativus, Trifolium pratense* var. *sativum, Vicia sativa* subsp. *sativa* and subsp. *segetalis*, amongst others.

After removal of neophyte records, a total of 500,808 hectad records (based on 842,921 individual records) of native or archaeophyte taxa on the VPDb were included in the analyses under criterion A, comprising 201,951 hectad records from the first time period and 298,857 from the second.

IUCN criteria B, C and D examine the current number of locations, populations or individuals in the area being considered, with criteria B and C also requiring evidence of any ongoing decline. A list of taxa recorded in twenty or fewer hectads between 1987 and 2014 was derived from the BSBI Distribution Database (DDb) and, for these, up-to-date data and other relevant information on locations, populations, individuals and trends were gathered from a wide range of sources (listed below) and used in the assessments of these taxa under criteria B, C and D:

- National Parks and Wildlife Service: dataset of 20,670 records for 308 taxa on the NPWS Vascular Plant Database. This database holds data from a wide variety of sources and includes records assembled for the Red Data Book (Curtis & McGough 1988) and by Neff (2000) for incorporation to Preston *et al*. (2002), from NPWS-commissioned rare vascular plant county and species surveys, site surveys, E.U. Habitats Directive Annex I habitats and Annex II/IV/V species monitoring surveys and various other reports, from NPWS-funded academic research projects, from published and unpublished scientific literature, from herbaria, and as communicated to NPWS.
- Northern Ireland Environment Agency/Centre for Environmental Data and Recording: dataset of 5,890 records for 199 taxa provided by CEDaR and including NIEA records from habitat and species baseline and monitoring surveys.
- Botanical Society of Britain and Ireland: dataset of 14,402 records for 379 taxa held on the BSBI Distribution Database (DDb) and provided by BSBI for use in the Red List project.
- National Biodiversity Data Centre: dataset of 6,259 records for 274 taxa provided.
- Herbaria of the National Botanic Gardens, Glasnevin (**DBN**) and Trinity College, Dublin (**TCD**): herbarium specimen details [and literature records] extracted by Dr Evelyn Gallagher and Dr Darach Lupton.
- Ireland and Great Britain floras, checklists and catalogues: Clapham *et al*. (1987), Parnell & Curtis (2012), Reynolds (2002), Scannell & Synnott (1987; 1989; 1990), Sell & Murrell (1996;

2006; 2009; 2014), Stace (1991; 1997; 2011), Stace *et al*. (2015), Webb (1977), Webb *et al*. (1996), Wyse Jackson (2014).

- County floras and checklists: including Booth (1979), Doogue *et al.* (1998), Feehan (2009), Forbes & Northridge (2012), Green (2008a), Hackney (1992), McNeill (2010), Nash (1993), O'Mahony (2009), Reilly (2001), Reynolds (2013), Synnott (1984).
- Local/regional floras and guides: including Akeroyd *et al*. (1996; 2011; 2013), Beesley & Wilde (1997), Bowering *et al*. (1995), Brodie & Sheehy Skeffington (1990), D'Arcy & Hayward (1992), Dickson (2003), FitzGerald (1996), Harron (1986), Heery (1993), Jebb (2013), Nelson (1999; 2001a; 2001b), Nelson & Walsh (1997), Randall (2004), Reilly (1993), Reynolds & Reynolds (1992), Roden & Sheehy Skeffington (2015), Scannell & Jebb (2000), Uí Chonchubhair (1995), Webb (1980), Webb & Scannell (1983), Whilde (1994), Wyse Jackson & Sheehy Skeffington (1984).
- Books covering specific plant groups: including Akeroyd (2014), Cope & Gray (2009), Curtis & Thompson (2009), Dudman & Richards (1997), Foley & Clarke (2005), Graham & Primavesi (1993), Harrap & Harrap (2005), Jermy & Camus (1991), Jermy *et al*. (1982; 2007), Lansdown (2008), McCosh & Rich (2011), Meikle (1984), Murphy (2009), Newton & Randall (2004), Page (2004), Preston (1995), Rich (1991), Rich & Jermy (1998), Rich *et al*. (2010c), Sayers & Sex (2013), Tutin (1980).
- Rare Plant Registers: Beesley (2006), Day & Hackney (2004), Faulkner (2015), Green (2008b), Northridge *et al*. (2014).
- Scientific periodicals published in Ireland and Great Britain containing records, papers and notes: journals consulted include *Biology and Environment: Proceedings of the Royal Irish Academy*. Section B, *Botanical Journal of the Linnean Society*, *Botanical Society of the British Isles Year Book*, *British Wildlife*, *BSBI News*, *Bulletin of the Irish Biogeographical Society*, *Glasra*, *Glasra (new series)*, *Irish Botanical News*, *Irish Wildlife Manuals*, *Journal of Botany*, *Journal of Life Sciences, Royal Dublin Society*, *New Journal of Botany*, *Proceedings of the Botanical Society of the British Isles*, *Proceedings of the Royal Irish Academy*. Section B, *Pteridologist*, *Report of the Botanical Society and Exchange Club of the British Isles*, *The Fern Gazette*, *The Irish Naturalist*, *The Irish Naturalists' Journal*, *Watsonia*.
- Atlases of plant distribution: Jermy *et al*. (1978), Palmer & Bratton (1995), Perring & Sell (1968), Perring & Walters (1962; 1976), Preston & Croft (1997), Preston *et al*. (2002), Rich & Woodruff (1990), Scott (1975), Stace *et al*. (2015).
- Various published and unpublished reports, on-line resources and personal communications.

Older literature sources were also consulted, and records and other relevant data were gleaned from many of the important books and papers on Irish floristics published in the 19th and 20th centuries, notably by such authors as Allin, Barrington, Brunker, Colgan, Corry, Dickie, Dublin Naturalists' Field Club, Hart, Mackay, Moore, More, Power, Praeger, Scully, Stewart and Webb, amongst others. Collins (1985), Mitchell (2000), Pearman & Walker (2016), Simpson (1960), Wyse Jackson (1995; 1996; 1998a) and http://www.botanicgardens.ie/herb/census/resource.htm contain references to the many useful and important publications by these and other authors.

The assembled datasets used for the Red List assessments are held and archived by NPWS, and comprise a baseline for potential use (contingent on appropriate permissions from the various data providers) in future Red List assessments.

Red List assessment categories and criteria

The Red List assessment process follows the IUCN categories and criteria (IUCN 2012b) and guidelines (IUCN 2016a), and, in order to take account of the regional nature of this analysis, the latest IUCN guidelines for their application at regional levels (IUCN 2012a). Definitions of the IUCN Red List categories (from IUCN (2012b)), regionally determined settings applied in this Red List and summary tables of the assessment criteria are provided below.

IUCN Red List categories

Extinct (EX). A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

Extinct in the Wild (EW). A taxon is Extinct in the Wild when it is known to survive only in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

Critically Endangered (CR). A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered, and it is therefore considered to be facing an extremely high risk of extinction in the wild**.**

Endangered (EN). A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered, and it is therefore considered to be facing a very high risk of extinction in the wild.

Vulnerable (VU). A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable, and it is therefore considered to be facing a high risk of extinction on the wild.

Near Threatened (NT). A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

Least Concern (LC). A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in the category.

Data Deficient (DD). A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or

population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be excercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

Not Evaluated (NE). A taxon is Not Evaluated when it has not yet been evaluated against the criteria.

Regionally determined settings applied

Regionally Extinct (RE): Taxa extinct within the region but extant in other parts of the world are assessed as Regionally Extinct. For the purposes of this Red List, taxa are assessed as RE when no individuals (not including those of indisputable neophyte origin) have been recorded in the wild in Ireland between 1970 (as used by Lockhart *et al*. (2012a; 2012b)) and 2014 or, if individuals have been recorded during this period, are subsequently confirmed by targeted surveys to be no longer present at these recorded sites. This category includes taxa which are extinct in the wild in Ireland, but for which there is wild-collected material from Ireland in *ex situ* cultivation or storage

Near Threatened (NT): Taxa are assessed as Near Threatened on the basis of an observed past or suspected future population reduction of 20–29% based on decline in Area of Occupancy or habitat quality.

Waiting List (WL): The concept of a Waiting List for taxa for which assessments could not be made was developed in the three recent regional vascular plant Red Lists of Cheffings & Farrell (2005), Dines (2008) and Stroh *et al*. (2014). In the present Red List, taxa for which additional information is required to enable assessments to be made are placed on the Waiting List for three main reasons – insufficient distribution or population data, taxonomic uncertainties and uncertainties regarding native or alien status (of taxa or individuals). For most taxa on the Waiting List research and surveys are required to address these issues before assessments can be made.

Data Deficient (DD): This category is not used here. Taxa for which there is inadequate distribution or population data to enable assessments are here placed on the Waiting List.

Not Evaluated (NE): This category is not used here. Essentially, all taxa of undisputed neophyte status, hybrids (other than the three assessed), taxa of lower taxonomic rank than subspecies, taxa that are erroneously recorded or unconfirmed from Ireland, and other taxa as are listed in the section on excluded taxa below may be regarded as Not Evaluated for the purposes of this Red List.

IUCN Red List criteria

Apart from the regionally determined settings noted above, the standard IUCN categories and criteria (IUCN 2012b) have been used to produce this Red List. Table 4, from IUCN (2016a), provides a summary of the five criteria (A–E) that are used to evaluate if a taxon belongs in a threatened category (Critically Endangered, Endangered or Vulnerable) while Table 5, which is adapted from Dines (2008), further summarises this and includes regional settings for Ireland applied in the present Red List. It should be noted that criterion E, which indicates the probability of extinction in the wild on the basis of qualtitative analysis, has, in line with other recent Red Lists, not been used in the present Red List.

Table 4. Summary of the five criteria (A–E) used to assess if a taxon belongs in a threatened category – Critically Endangered, Endangered or Vulnerable (IUCN 2016a).

A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%

A1 Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND understood AND have ceased.
A2 Population reduction observed, estimated, inferred, or suspected in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.
A3 Population reduction projected, inferred or suspected to be met in the future (up to a maximum of 100 years) *[(a) cannot be used for A3]*.
A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.

based on any of the following:

(a) direct observation *[except A3]*
(b) an index of abundance appropriate to the taxon
(c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality
(d) actual or potential levels of exploitation
(e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.

B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)

	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (EOO)	< 100 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented **OR** Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** area, extent and/or quality of habitat; **(iv)** number of locations or subpopulations; **(v)** number of mature individuals			
(c) Extreme fluctuations in any of: **(i)** extent of occurrence; **(ii)** area of occupancy; **(iii)** number of locations or subpopulations; **(iv)** number of mature individuals			

C. Small population size and decline

	Critically Endangered	Endangered	Vulnerable
Number of mature individuals	< 250	< 2,500	< 10,000
AND at least one of C1 or C2			
C1. An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2. An observed, estimated, projected or inferred continuing decline AND at least 1 of the following 3 conditions:			
(a) (i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
(ii) % of mature individuals in one subpopulation =	90–100%	95–100%	100%
(b) Extreme fluctuations in the number of mature individuals			

D. Very small or restricted population

	Critically Endangered	Endangered	Vulnerable
D. Number of mature individuals	< 50	< 250	**D1.** < 1,000
D2. *Only applies to the VU category* Restricted area of occupancy or number of locations with a plausible future threat that could drive the taxon to CR or EX in a very short time.	-	-	**D2.** typically: AOO < 20 km² or number of locations ≤ 5

E. Quantitative Analysis

	Critically Endangered	Endangered	Vulnerable
Indicating the probability of extinction in the wild to be:	≥ 50% in 10 years or 3 generations, whichever is longer (100 years max.)	≥ 20% in 20 years or 5 generations, whichever is longer (100 years max.)	≥ 10% in 100 years

Table 5. Summary of IUCN Categories and Criteria, including regional settings, used in this Red List

Ireland Red List Categories	Criteria	Thresholds
EX Extinct		Globally extinct. A taxon is **EX** when there is no reasonable doubt that the last individual has died. There are no confirmed extinctions of vascular plant species or subspecies in this category in the Irish flora
EW Extinct in the Wild		There are no Irish vascular plant species or subspecies in this category. Taxa which are extinct in the wild in Ireland, but for which there is wild-collected Irish material in *ex situ* cultivation or storage are assessed as **RE**
RE Regionally Extinct		Exinct in the wild in Ireland – either not recorded between 1970 and 2014 or, if recorded then, subsequently confirmed by targeted surveys to be no longer present at these recorded sites
CR Critically Endangered	A	≥80% decline in Area of Occupancy
	B	1 location and continuing decline
	C	< 250 individuals and continuing decline
	D	< 50 individuals
EN Endangered	A	50–79% decline in Area of Occupancy
	B	2–5 locations and continuing decline
	C	250–2,499 individuals and continuing decline
	D	50–249 individuals
VU Vulnerable	A	30–49% decline in Area of Occupancy
	B	6–10 locations and continuing decline
	C	2,500–10,000 individuals and continuing decline
	D1	250–1,000 individuals
	D2	≤ 5 locations and plausible future threat
NT Near Threatened	A	20–29% decline in Area of Occupancy or habitat quality
LC Least Concern		No thresholds met
WL Waiting List		Insufficient distribution or population data, taxonomic uncertainties and/or uncertainties regarding native or alien status (of taxa or individuals) mean that no assessment could be made

Application of Red List criteria

The assessment process used the IUCN categories and criteria (IUCN 2012b), with regionally determined settings noted above, and guidelines (IUCN 2016a), supplemented by the latest IUCN guidelines for their application at regional levels (IUCN 2012a). The approaches taken for carrying out assessments under criterion A are described below and as noted in Data and data sources, above. Up-to-date data on numbers of locations, populations, individuals and trends, and other relevant information assembled from a wide range of sources (as noted above), were used in the assessments of taxa under criteria B, C and D. The results of the assessments are in the Red List table, and summarised in Figure 1 and Tables 6–12.

Stroh *et al*. (2014) provide worked-examples for English populations of ten vascular plant species which illustrate the application of the IUCN criteria (with England regional settings) and which are helpful for providing further clarification of the Red List assessment process.

Calculating trends in Area of Occupancy

Area of Occupancy (AOO) is defined as the area occupied by a taxon within its overall 'range'. At the simplest level, calculating trends in AOO involve a comparison of the number of hectads within which the taxon was present in the first and second time periods.

However, there are a number of spatial and temporal biases inherent in all biological datasets based on results collected on an *ad hoc* basis by different recorders (differing abilities, specialisms, time-availability for recording, etc.). Some areas will be well recorded because of their accessibility, the expertise of the recorders and/or the number of volunteers available, and other areas less so. These biases may change through time and therefore analysing trends for a given species is not straightforward (Hassall & Thompson 2010; Prendergast *et al*. 1993). In recent years, however, statistical methods have been developed to account for spatial and temporal variation in records, thereby making the results of trend analyses more robust. It is accepted best practice that one of these methods be used to more accurately assess trends in AOO in a given taxon. Within the Ireland Red List FRESCALO was used. This method was successfully used to calculate trends in AOO in the recent England Red List (Stroh *et al*. 2014).

FRESCALO (FREquency SCAling LOcal) (Hill 2012) corrects for variation in recording intensity geographically and over time. It uses the idea of 'neighbourhoods' – floristically similar hectads surrounding a target location. To account for spatial variation in recording effort, FRESCALO makes the simple assumption that if each neighbourhood was searched thoroughly, the mean species frequency would be similar across all neighbourhoods. By calculating the deviation of each neighbourhood from this expected value (accounting for species richness) it is possible to estimate recorder effort.

FRESCALO accounts for variation in recording effort over time by considering the commonest species (termed 'benchmark' species) recorded in each neighbourhood. FRESCALO does this by first pooling the list of species records for each neighbourhood and then ranking them by their frequency across all time periods (in this case the two time periods 1930–1969 and 1987–1999). Species in the top 15% in a neighbourhood were used as suitable benchmarks for the AOO analysis for this Red List. The change in a species' occurrence was then calculated relative to these benchmarks. Since the benchmark species are common and assumed to be stable, any change in their frequency is considered likely to be the result of changes in recording effort over time.

Once spatial and temporal variations in recorder effort are calculated, FRESCALO works out the trend in distribution between the two time periods by first giving each species a value, known as a Time factor, or 'Tfactor'. This 'Tfactor' measures the relative probability of finding the target species on a typical visit relative to the benchmark species, with decisions on change dependant on the ratio of Tfactor values. Tfactors were calculated for both time periods, and a z-test performed for each species to test if the two time periods are significantly different from

one another. This test also calculated the probability that the trend could have resulted by chance. When the probability is 5% or less, the trend between the two time periods will be considered unlikely to have resulted by chance and included as a statistically significant trend. Where the result is significant the percentage change in recording rate relative to benchmarks (Tfactor) was calculated and used in assigning a Red List status.

Upon consideration of the percentage decline in AOO based on the FRESCALO analysis, the results appeared to be unusually high in some instances and it is speculated that the accuracy might be improved in the future once better resolution habitat data is available to feed into the model (the current model used the CORINE Land Cover 2006 habitat layer – see http://www.epa.ie/pubs/data/corinedata/). For the present Red List assessment, however, it was considered that a closer look at the dataset was merited and that further analysis was likely to be of benefit, in particular to focus on likely losses and declines being masked by the higher numbers of records in the later time period arising from increased recording effort.

It was clear from the results provided by the decline in the number of hectads and FRESCALO analyses that not all taxa known to be declining, experiencing site losses or under threat in Ireland were identified. Thus, a third analysis of the BSBI VPDb dataset was undertaken. This analysis utilised MS Excel pivot tables, useful tools for summarising large amounts of data, which were employed to calculate the number of hectads that had taxon presence in 1930–1969 but not 1987–1999 and the percentage of hectad records from 1930 to 1969 that were not refound in the period 1987 to 1999. These data were then used to see which taxa had suffered past declines. Those hectads in which taxa had been recorded in the first time period (1930–1969), but not in the second (1987–1999) were termed "non-refinds". The number of non-refinds and the percentage of these in relation to the total number of hectads recorded in the two time periods provided, in combination, a strong indication and useful measure of probable losses, which were used to inform the assesments. The analysis also provided an indication of recording effort, in that hectads in which taxa had been recorded in the second time period but not the first were identified – the likelihood of these being attributable to increased recording effort, leading to the discovery of previously unknown sites, or to recent spread was assessed.

The results of the three analyses (hectad decline, FRESCALO and hectad "non-refinds") and expert judgement of the Red List project group were taken into account for the assignment of Red List status on the basis of AOO decline.

Calculating trends in Extent of Occurrence

Extent of Occurrence (EOO) is defined as the area contained within the shortest continuous imaginary boundary which can be drawn to encompass all the known, inferred or projected sites of present occurrence of a taxon (IUCN 2012b). EOO is commonly referred to as a measure of range, although strictly speaking EOO measures the geographical spread of areas currently occupied by the taxon. A taxon with a large EOO is usually less likely to be adversely affected by a single threatening event than a taxon with a smaller EOO because the risk is spread more widely (IUCN 2016a).

There are several different methods available for measuring EOO. Upon review of these methodologies, the Ireland Red List used the alpha hull method for calculating the EOO trend between the two time periods. This method is recommended by the IUCN and was used on vascular plant data in the GB Red List (Cheffings & Farrell 2005) and the England Red List (Stroh *et al*. 2014).

The open source statistical R Package 'alphahull' was used to do the EOO calculation, including fitting alpha hulls. The areas between the two time periods were compared to calculate the percentage decline.

Application of criterion/subcriterion A3c

For their GB Red List Cheffings & Farrell (2005) did not attempt to project possible future declines in populations of taxa; however, since this time there have been two analyses of the status of and future prospects for Irish habitats that are listed on Annex I of the E.U. Habitats Directive (in 2007 and 2013), and the results of these have been found to be of use for informing assessments in some of the Irish Red Lists published for other groups in recent years (see http://www.npws.ie/publications). The latest analysis of fifty-eight Annex I habitats occurring in the Republic of Ireland (NPWS 2013a; 2013b) resulted in unfavourable ("inadequate" or "bad") overall assessments for almost all (91.4%) of these and, notably, the future prospects for almost all (86.2%) were assessed as unfavourable also. A wide range of habitats is listed on Annex I of the E.U. Habitats Directive – these are among the most species-rich natural and semi-natural habitats present in Ireland and are habitats for the majority of its rare and threatened vascular plant taxa. Losses of and damage to these habitats as may occur in the future would have negative implications for many of Ireland's rarest and most threatened vascular plants. Useful information and descriptions of Irish habitats and plant communities and their importance for rare and threatened vascular plant taxa are to be found in the works of Cabot (1999), Curtis & McGough (1988), Devlin (2011), Doogue & Krieger (2010), Fossitt (2000), NPWS (2013a; 2013b), Parnell & Curtis (2012), Praeger (1934a), White & Doyle (1982), amongst others.

The results of the Annex I habitats assessments (NPWS 2013a; 2013b), the vulnerability of habitats to damage (the three point scale of habitat vulnerability in Curtis & McGough (1988) and other sources were used in assessing this), the degree to which taxa are linked to particular habitats, the likely future threats to habitats arising from proposed, targeted land use programmes, such as those for Irish agriculture (DAFF 2010 [and as considered by Lehane & O'Leary (2012)]; DAFM 2015) and afforestation (Forest Service 2015), and expert judgment were all considered in the assessment of projected, inferred or suspected population reduction based on a decline in habitat quality (criterion A, subcriterion 3c).

International importance

Following IUCN guidelines (IUCN 2012a), the international importance of populations of native and archaeophyte taxa occurring in Ireland was examined, in terms of the proportion of the European population of these found in Ireland, Irish endemic status and Global/European Red List status.

Taxa for which Ireland holds a significant proportion of the European population

The European ranges and populations of Irish native and archaeophyte vascular plant species and subspecies were examined in order to assess whether or not a significant proportion of the European population occurs in Ireland. In line with the GB and England Red Lists (Cheffings & Farrell 2005; Stroh *et al*. 2014), a significant proportion is taken in this Red List as comprising more than 25% of the European population. Assessments were based on available data and the results for taxa were recorded in terms of certainty that Ireland holds over 25% of the European population (Yes, Probably or Possibly), following the approaches taken in Cheffings & Farrell (2005) and Stroh *et al*. (2014).

The majority of Irish vascular plant taxa occur widely in Europe and, for these, the proportion of the European population occurring in Ireland is less than 25%. In order to identify taxa for which Ireland might potentially hold more than 25% of the European population, a candidate list of Irish vascular plant species and subspecies was compiled from various sources – taxa included on this list were:

- Included in the Oceanic and Suboceanic categories, and Endemic, Mediterranean-montane and unassigned floristic elements of Preston & Hill (1997);
- Those for which international responsibility was assessed as certain, probable or possible on the GB, England and Wales Red Lists (Cheffings & Farrell 2005; Dines 2008; Stroh *et al.* 2014);
- Those assessed in Pearman & Preston (2003), the basis for the listing of international responsibility in Cheffings & Farrell (2005);
- Those assessed as threatened or Near Threatened in Europe (Bilz *et al*. 2011) or globally (IUCN 2016b);
- Ireland endemics. These were identified as part of this work (see methodology below) and for these, of course, Ireland holds 100% of the European population;
- Included on the list of GB/England endemics and near endemics in Cheffings & Farrell (2005) and Stroh *et al.* (2014);
- Listed in Stace (2005) as occurring in Ireland but not Great Britain;
- Traditionally included in the Hiberno-Lusitanian element of the Irish flora (variously termed over the years as Lusitanian, Lusitanian-Mediterranean, Pyrenean-Mediterranean, Hiberno-Cantabrian, amongst others);
- Included in the North American element of Matthews (1955);
- Those which are widespread in Europe but generally rare;
- Variously considered to be Ireland specialities, e.g. *Achillea maritima*, *Gentiana verna*, *Inula salicina*, amongst others;
- Other taxa that came to mind or were mentioned in various publications and for which the possibility that Ireland might hold more 25% of the European population was considered not too remote;
- All native and archaeophyte vascular plant subspecies occurring in Ireland, irrespective of their inclusion or not in any of the above.

For all taxa on the candidate list the Irish and European populations and ranges were compared and an assessment of the likelihood that Ireland holds more that 25% of the European population was made. In most cases assessment involved comparison of numbers of grid squares in which taxa were recorded – in the case of Ireland, Great Britain, the Isle of Man and the Channel Islands, 10km x 10km grid square mapping in Preston *et al*. (2002), and in Europe, 50km x 50km UTM grid square mapping produced as part of the *Atlas Florae Europaeae* project (Jalas & Suominen 1972–1999; Kurtto & Lampinen 2004–2013). However, gridded distribution mapping is not yet available for all of Europe's vascular plant taxa so, in order to carry out assessments, it was necessary to examine and assess additional relevant information and data from many disparate sources, including Hill *et al*. (2004), Hultén (1958; 1964; 1971a; 1971b), Hultén & Fries (1986), Jonsell (2001), Meusel & Jäger (1992), Meusel *et al*. (1965; 1978), Perring & Sell (1968), Preston *et al*. (2002), Preston & Hill (1997), Sell & Murrell (1996; 2006; 2009; 2014), Stace (2011), Stace *et al*. (2015), Tutin *et al*. (1964–1980; 1993), Webb (1983), the BSBI Handbooks series, maps in the *Journal of Ecology* Biological Flora series, European regional floras, E.U. Habitats Directive Article 17 species status reports from various E.U. member states (see http://bd.eionet.europa.eu/article17/reports2012/species/summary/), the BSBI Distribution Database (DDb), Global Biodiversity Information Facility (GBIF) on-line mapping (http://www.gbif.org), information held on Euro+Med (2006–), taxon-specific publications in books and scientific periodicals.

Vascular plant species and subspecies for which Ireland holds or possibly holds a significant proportion (>25%) of the European population are noted in the Red List table and summarised in Table 13.

Endemics

A list of vascular plant species and subspecies that are endemic to Ireland, that is, which do not occur naturally outside of Ireland, was compiled through examination of a wide variety of sources, including Bateman & Denholm (2012), Dang *et al*. (2012), Druce (1932), Dudman & Richards (1997), Ingrouille & Stace (1986), Jebb (2009; 2014), Kirschner & Rich (1996), Kirschner & Štěpánek (1998), Leach & Pearman (2006), McCosh & Rich (2011), Newton & Randall (2004), Perring & Sell (1968), Praeger (1934a; 1950), Preston & Hill (1997), Prichard (1959), Rich & Proctor (2009), Rich *et al*. (1999; 2005, 2008a; 2008b; 2010a; 2010b, 2010c; 2013a; 2013b); Scannell & Synnott (1972), Sell & Murrell (1996; 2006; 2009; 2014), Stace (2005; 2011), Stace *et al*. (2015), Walters (1978), Webb (1983) and Wyse Jackson & Parnell (1987). The taxonomic status of taxa included in these was checked in Stace (2011) and those recognised at the specific or subspecific ranks in that work whose entire known native distribution is confined to Ireland (as indicated by examination of standard literature and database sources) were listed as Irish endemics. Dudman & Richards (1997), McCosh & Rich (2011) and Sell & Murrell (1996; 2006; 2009; 2014) were consulted for taxa not in Stace (2011) and these were added to the list as appropriate. Species and subspecies of vascular plant regarded as endemic to Ireland are listed in the Red List table and summarised in Table 14.

European and Global Red Lists

Irish native or archaeophyte vascular plant taxa assessed as threatened or Near Threatened in Europe or globally were identified from Bilz *et al*. (2011) and IUCN (2016b), respectively. These are listed in the Red List table and summarised in Table 15.

RESULTS OF ASSESSMENTS

Summary of Red List assessments

The number of vascular plant taxa in each Red List category is summarised in Table 6 and Figure 1. Tables 7, 8, 9, 10 and 11 list taxa assessed as Regionally Extinct, Critically Endangered, Endangered, Vulnerable and Near Threatened. Taxa placed on the Waiting List are listed in Table 12.

Table 6. Number and proportion of vascular plant taxa in each Red List category in Ireland

	Ireland	
	No. of taxa	**% of total**
Regionally Extinct (RE)	15	1.2
Critically Endangered (CR)	20	1.7
Endangered (EN)	25	2.1
Vulnerable (VU)	61	5.0
Near Threatened (NT)	98	8.1
Waiting List (WL)	105	8.7
Least Concern (LC)	887	73.2
Total	**1211**	**100**

Figure 1. The proportion of vascular plant taxa in each Red List category in Ireland

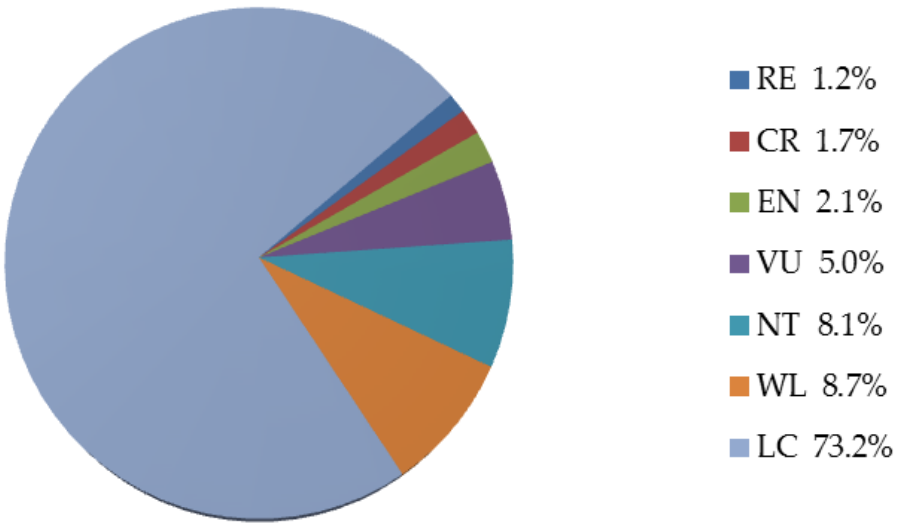

Table 7. Taxa assessed as Regionally Extinct (15)

Carex buxbaumii	*Gymnocarpium dryopteris*	*Polygonum maritimum*
Chenopodium vulvaria	*Hierochloe odorata*	*Saxifraga granulata*
Dryopteris remota	*Luzula pallescens*	*Scandix pecten-veneris*
Euphorbia peplis	*Matthiola sinuata*	*Scheuchzeria palustris*
Fumaria densiflora	*Papaver hybridum*	*Serratula tinctoria*

Table 8. Taxa assessed as Critically Endangered (20)

Achillea maritima	*Helianthemum nummularium*	*Lithospermum arvense*
Adoxa moschatellina	*Hieracium hartii*	*Ranunculus tripartitus*
Carex depauperata	*Hieracium hibernicum*	*Rubus chamaemorus*
Cirsium heterophyllum	*Hordelymus europaeus*	*Saxifraga nivalis*
Eleocharis parvula	*Hottonia palustris*	*Sorbus scannelliana*
Erica vagans	*Inula salicina*	*Valerianella rimosa*
Gymnocarpium robertianum	*Juncus compressus*	

Table 9. Taxa assessed as Endangered (25)

Asparagus prostratus	*Gnaphalium sylvaticum*	*Parapholis incurva*
Calamagrostis stricta	*Hieracium scullyi*	*Poa alpina*
Cardamine impatiens	*Hieracium sparsifrons*	*Salix phylicifolia*
Carex divisa	*Hydrilla verticillata*	*Sorbus anglica*
Colchicum autumnale	*Hypochaeris glabra*	*Sorbus devoniensis*
Dianthus armeria	*Lolium temulentum*	*Teesdalia nudicaulis*
Epilobium alsinifolium	*Melampyrum sylvaticum*	*Trifolium glomeratum*
Epipactis phyllanthes	*Mentha pulegium*	
Geranium sylvaticum	*Misopates orontium*	

Table 10. Taxa assessed as Vulnerable (61)

Ajuga pyramidalis	*Galeopsis angustifolia*	*Pyrola rotundifolia* subsp. *maritima*
Alchemilla alpina	*Geranium pratense*	*Ranunculus fluitans*
Alchemilla glaucescens	*Hieracium argentatum*	*Ranunculus penicillatus* subsp. *pseudofluitans*
Allium schoenoprasum	*Hordeum secalinum*	*Rumex pulcher*
Anacamptis morio	*Hypericum hirsutum*	*Sanguisorba officinalis*
Arabidopsis petraea	*Juncus filiformis*	*Sarcocornia perennis*
Arenaria ciliata	*Lathyrus japonicus*	*Saussurea alpina*
Arenaria norvegica	*Lepidium latifolium*	*Saxifraga rosacea* subsp. *hartii*
Artemisia absinthium	*Limonium recurvum* subsp. *portlandicum*	*Scleranthus annuus*
Asplenium obovatum	*Lycopodiella inundata*	*Silene gallica*
Asplenium onopteris	*Mertensia maritima*	*Sorbus hibernica*
Asplenium septentrionale	*Mibora minima*	*Sorbus rupicola*
Calamagrostis epigejos	*Minuartia recurva*	*Subularia aquatica*
Callitriche palustris	*Orthilia secunda*	*Trifolium subterraneum*
Callitriche truncata	*Papaver argemone*	*Valerianella dentata*
Centaurium littorale	*Persicaria vivipara*	*Vicia orobus*
Cephalanthera longifolia	*Pilularia globulifera*	*Viola hirta*
Chaerophyllum temulum	*Polystichum lonchitis*	*Viola lactea*
Chenopodium bonus-henricus	*Potentilla fruticosa*	*Viola lutea*
Cryptogramma crispa	*Pseudorchis albida*	
Cytisus scoparius subsp. *maritimus*		
Filago vulgaris		

Table 11. Taxa assessed as Near Threatened (98)

Agrimonia procera	*Eriocaulon aquaticum*	*Phegopteris connectilis*
Alopecurus aequalis	*Eriophorum gracile*	*Puccinellia fasciculata*
Althaea officinalis	*Euphorbia exigua*	*Pyrola media*
Anchusa arvensis	*Filago minima*	*Pyrola minor*
Anthriscus caucalis	*Galeopsis speciosa*	*Pyrola rotundifolia*
Arbutus unedo	*Gentiana verna*	*Pyrola rotundifolia*
Astragalus danicus	*Gentianella amarella*	subsp. *rotundifolia*
Ballota nigra	*Gentianella campestris*	*Radiola linoides*
Betonica officinalis	*Geranium purpureum*	*Ranunculus baudotii*
Blysmus rufus	*Glaucium flavum*	*Rhynchospora fusca*
Botrychium lunaria	*Glebionis segetum*	*Rumex acetosa* subsp. *hibernicus*
Bromopsis erecta	*Groenlandia densa*	*Rumex maritimus*
Bromus commutatus	*Hammarbya paludosa*	*Salix herbacea*
Bromus racemosus	*Helianthemum oelandicum*	*Saxifraga hirculus*
Carduus tenuiflorus	*Hyoscyamus niger*	*Saxifraga rosacea*
Carex acuta	*Hypopitys monotropa*	*Saxifraga rosacea* subsp. *rosacea*
Carex appropinquata	*Isoetes echinospora*	*Schoenoplectus triqueter*
Carex elongata	*Lamium confertum*	*Scirpus sylvaticus*
Carex pauciflora	*Ligusticum scoticum*	*Scrophularia umbrosa*
Carex spicata	*Linaria repens*	*Silybum marianum*
Carum verticillatum	*Linaria vulgaris*	*Simethis mattiazzii*
Centaurea scabiosa	*Linum bienne*	*Sparganium natans*
Centaurium pulchellum	*Lithospermum officinale*	*Spiranthes romanzoffiana*
Centunculus minimus	*Lotus subbiflorus*	*Spiranthes spiralis*
Chamaemelum nobile	*Lycopodium clavatum*	*Thelypteris palustris*
Clinopodium acinos	*Malva neglecta*	*Torilis nodosa*
Coeloglossum viride	*Najas flexilis*	*Trifolium scabrum*
Crambe maritima	*Neotinea maculata*	*Trollius europaeus*
Cynoglossum officinale	*Oenanthe fistulosa*	*Verbena officinalis*
Deschampsia setacea	*Oenanthe pimpinelloides*	*Veronica agrestis*
Diphasiastrum alpinum	*Ophioglossum azoricum*	*Viola persicifolia*
Elatine hexandra	*Ophrys insectifera*	*Wahlenbergia hederacea*
Equisetum hyemale x *E. ramosissimum* = *E.* x *moorei*	*Orobanche rapum-genistae*	
	Parentucellia viscosa	

International importance

Taxa for which Ireland holds a significant proportion of the European population

Vascular plant species and subspecies for which Ireland holds or possibly holds more than 25% of the European population are shown in the Red List table and summarised in Table 13. In this table "Yes" = sure that Ireland holds more than 25% of the European population, "Probably" = fairly sure that Ireland holds more than 25% of the European population and "Possibly" = reasonable chance that Ireland holds more than 25% of the European population – definitions adapted from Cheffings & Farrell (2005) and Stroh *et al*. (2014).

Table 12. Taxa place on the Waiting List (105)

Agrostemma githago	*Dryopteris cambrensis* subsp. *pseudocomplexa*	*Pinus sylvestris*
Aira caryophyllea subsp. *caryophyllea*	*Dryopteris oreades*	*Poa infirma*
Aira caryophyllea subsp. *multiculmis*	*Eleocharis palustris* subsp. *palustris*	*Populus nigra*
Alchemilla filicaulis subsp. *filicaulis*	*Elytrigia campestris*	*Potamogeton pectinatus* x *vaginatus* = *P.* x *bottnicus*
Anagallis arvensis subsp. *foemina*	*Epipactis leptochila*	*Prunus domestica* subsp. *italica*
Anthemis arvensis	*Erica ciliaris*	*Ranunculus acris* subsp. *borealis*
Anthemis cotula	*Erodium lebelii*	*Ranunculus flammula* subsp. *minimus*
Arctium lappa	*Erophila majuscula*	*Ranunculus flammula* subsp. *scoticus*
Arctium minus subsp. *minus*	*Euphrasia frigida*	*Rhinanthus minor* subsp. *borealis*
Arctium minus subsp. *pubens*	*Euphrasia micrantha*	*Rhinanthus minor* subsp. *monticola*
Arctium nemorosum	*Euphrasia officinalis*	*Rhinanthus minor* subsp. *stenophyllus*
Arenaria serpyllifolia subsp. *lloydii*	*Euphrasia officinalis* subsp. *anglica*	*Rosa caesia* subsp. *caesia*
Asplenium trichomanes subsp. *trichomanes*	*Euphrasia officinalis* subsp. *monticola*	*Rosa obtusifolia*
Atriplex longipes	*Euphrasia officinalis* subsp. *pratensis*	*Rumex acetosa* subsp. *biformis*
Baldellia ranunculoides subsp. *repens*	*Euphrasia pseudokerneri*	*Rumex acetosella* subsp. *acetosella*
Bromus hordeaceus subsp. *ferronii*	*Festuca arenaria*	*Salicornia dolichostachya*
Bromus hordeaceus subsp. *thominei*	*Festuca ovina* subsp. *hirtula*	*Salicornia emerici*
Bromus secalinus	*Festuca ovina* subsp. *ophioliticola*	*Salicornia fragilis*
Callitriche hermaphroditica subsp. *hermaphroditica*	*Festuca ovina* subsp. *ovina*	*Salicornia pusilla*
Callitriche hermaphroditica subsp. *macrocarpa*	*Festuca rubra* subsp. *litoralis*	*Salicornia ramosissima*
Camelina sativa	*Geranium robertianum* subsp. *celticum*	*Salix cinerea* subsp. *cinerea*
Campanula rotundifolia subsp. *montana*	*Geranium robertianum* subsp. *maritimum*	*Salix euxina*
Carex lepidocarpa subsp. *jemtlandica*	*Hypopitys monotropa* subsp. *hypophegea*	*Sparganium erectum* subsp. *erectum*
Carex oederi subsp. *bergrothii*	*Hypopitys monotropa* subsp. *monotropa*	*Sparganium erectum* subsp. *oocarpum*
Carum carvi	*Isatis tinctoria*	*Stellaria neglecta*
Catapodium rigidum subsp. *majus*	*Juncus bulbosus* subsp. *kochii*	*Taraxacum amarellum*
Centaurea cyanus	*Ligustrum vulgare*	*Taraxacum webbii*
Cerastium fontanum subsp. *holosteoides*	*Limonium procerum*	*Thymus pulegioides*
Dactylorhiza fuchsii subsp. *hebridensis*	*Limonium recurvum*	*Utricularia intermedia*
Dactylorhiza incarnata subsp. *gemmana*	*Limonium recurvum* subsp. *humile*	*Utricularia ochroleuca*
Deschampsia cespitosa subsp. *alpina*	*Limonium recurvum* subsp. *pseudotranswallianum*	*Utricularia stygia*
Deschampsia cespitosa subsp. *parviflora*	*Luronium natans*	*Utricularia vulgaris*
Dryopteris affinis subsp. *kerryensis*	*Lythrum portula* subsp. *longidentatum*	*Zannichellia palustris* subsp. *palustris*
Dryopteris affinis subsp. *paleaceolobata*	*Marrubium vulgare*	*Zannichellia palustris* subsp. *pedicellata*
	Mercurialis perennis	
	Nymphaea alba subsp. *occidentalis*	
	Odontites vernus subsp. *vernus*	

Table 13. Vascular plant species and subspecies for which Ireland holds or possibly holds more than 25% of the European population

Taxon	Ireland Red List Category	>25% of European Population occurring in Ireland. *= Irish endemic
Arenaria ciliata subsp. *hibernica*	VU	Yes*
Calystegia sepium subsp. *roseata*	LC	Possibly
Cirsium dissectum	LC	Possibly
Dactylorhiza fuchsii subsp. *okellyi*	LC	Yes
Dactylorhiza incarnata subsp. *coccinea*	LC	Yes
Dactylorhiza incarnata subsp. *pulchella*	LC	Yes
Dactylorhiza kerryensis	LC	Yes*
Dryopteris aemula	LC	Yes
Dryopteris affinis subsp. *kerryensis*	WL	Yes*
Eriocaulon aquaticum	NT	Yes
Euphrasia arctica	LC	Possibly
Euphrasia tetraquetra	LC	Possibly
Gentianella amarella subsp. *hibernica*	NT	Yes*
Geranium robertianum subsp. *celticum*	WL	Yes
Helianthemum oelandicum subsp. *piloselloides*	NT	Possibly
Hieracium argentatum	VU	Yes*
Hieracium basalticola	LC	Yes*
Hieracium hartii	CR	Yes*
Hieracium hibernicum	CR	Yes*
Hieracium scullyi	EN	Yes*
Hieracium sparsifrons	EN	Yes*
Hymenophyllum tunbrigense	LC	Yes
Hymenophyllum wilsonii	LC	Probably
Hypericum canadense	LC	Yes
Limonium humile	LC	Yes
Limonium recurvum	WL	Yes
Limonium recurvum subsp. *humile*	WL	Yes
Limonium recurvum subsp. *portlandicum*	VU	Yes
Limonium recurvum subsp. *pseudotranswallianum*	WL	Yes*
Luzula multiflora subsp. *hibernica*	LC	Yes*
Najas flexilis	NT	Yes
Pedicularis sylvatica subsp. *hibernica*	LC	Yes
Ranunculus flammula subsp. *scoticus*	WL	Possibly
Rubus hesperius	LC	Yes*
Rumex acetosa subsp. *hibernicus*	NT	Yes
Saxifraga rosacea subsp. *hartii*	VU	Yes*
Saxifraga spathularis	LC	Yes
Senecio jacobaea subsp. *dunensis*	LC	Possibly
Sisyrinchium bermudiana	LC	Yes
Sorbus hibernica	VU	Yes*
Sorbus scannelliana	CR	Yes*
Spergularia rupicola	LC	Yes
Spiranthes romanzoffiana	NT	Yes
Taraxacum amarellum	WL	Yes*
Taraxacum webbii	WL	Yes*
Trichomanes speciosum (sporophyte)	LC	Yes
Viola tricolor subsp. *curtisii*	LC	Possibly

Ireland also holds a significant proportion (>25%) of the European populations of a number of other taxa (some of which are Irish endemics) that are now mostly placed at a taxonomic rank below subspecies, for example, *Allium ampeloprasum* var. *babingtonii, Arabis hirsuta* var. *brownii, Dactylorhixa kerryensis* var. *kerryensis, Dactylorhiza kerryensis* var. *occidentalis, Euphrasia salisburgensis* var. *hibernica, Festuca ovina* subsp. *ophioliticola* var. *hibernica* (Markgr.-Dann.) M.J. Wilk., *Isoetes lacustris* var. *morei* (Moore) Hook., *Saxifraga hirsuta* var. *dentata* (Haw.) Pugsley, *Saxifraga spathularis* var. *serratifolia* (D. Don) Pugsley, *Saxifraga stellaris* var. *gemmifera* D.A. Webb, *Vicia sepium* var. *hartii* Akeroyd, amongst others. Although some of these are considered by various authors to be subspecies or even separate species, some authors do not recognise them at all; research to establish the taxonomic validity and appropriate taxonomic rank, and to assess the distribution and conservation status of these and other such taxa is merited.

In addition, Ireland holds 25% or more of the European population of a number of apomictic taxa which, not being Irish endemics, are not assessed in this Red List. Examples from the genus *Rubus* include *R. aghadergensis* D.E. Allen, *R. dunensis* W.M. Rogers, *R. iricus* W.M. Rogers, *R. lamburnensis* Rilstone and *R. waddellii* D.E. Allen – see Allen (1994; 1998), Newton & Randall (2004) and Sell & Murrell (2014) for further details. Examples from the genus *Hieracium* include *H. angustisquamum* (Pugsley) Pugsley, *H. hypochaeroides* S. Gibson, *H. iricum* Fr., *H. sanguineum* (Ley) W.R. Linton and *H. stewartii* (F. Hanb.) Roffey – see McCosh & Rich (2011) and Sell & Murrell (2006) for further details.

Endemics

Irish endemic vascular plant species and subspecies are shown in the Red List table and summarised in Table 14.

Table 14. Vascular plant species and subspecies endemic to Ireland

Taxon	Ireland Red List Category
Arenaria ciliata subsp. *hibernica*	VU
Dactylorhiza kerryensis	LC
Dryopteris affinis subsp. *kerryensis*	WL
Gentianella amarella subsp. *hibernica*	NT
Hieracium argentatum	VU
Hieracium basalticola	LC
Hieracium hartii	CR
Hieracium hibernicum	CR
Hieracium scullyi	EN
Hieracium sparsifrons	EN
Limonium recurvum subsp. *pseudotranswallianum*	WL
Luzula multiflora subsp. *hibernica*	LC
Rubus hesperius	LC
Saxifraga rosacea subsp. *hartii*	VU
Sorbus hibernica	VU
Sorbus scannelliana	CR
Taraxacum amarellum	WL
Taraxacum webbii	WL

European and Global Red Lists

Irish native or archaeophyte vascular plant taxa assessed as threatened or Near Threatened in Europe (Bilz *et al*. 2011) and globally (IUCN 2016b) are shown in the Red List table and summarised in Table 15.

Table 15. Native/archaeophyte Irish vascular plants taxa assessed as threatened or Near Threatened on European and Global Red Lists (Bilz *et al*. 2011; IUCN 2016b)

Taxon	European Red List Category/Criteria	Global Red List Category/Criteria
Anacamptis morio	NT	
Baldellia ranunculoides	NT	NT
Eriophorum gracile	NT	
Najas flexilis	VU (B2ab(iv))	LC
Oenanthe fluviatilis	NT	NT
Pilularia globulifera	NT	NT
Sorbus anglica		VU (D1)
Sparganium natans	NT	LC
Spiranthes romanzoffiana	NT	

FORMAT OF THE RED LIST

Descriptions of Red List columns

Taxon Name: The name and taxonomic concept of listed taxa follows Stace (2011), wherein authorities for taxon names are to be found; authorities are also available on-line from http://bsbi.org/resources, IPNI (2016), Jebb (2014) and elsewhere. Authorities for taxon names not included in Stace (2011) follow IPNI (2016) and are provided in the comments column. Common English and Irish names of taxa are not provided here, but are to be found in the works of Anonymous (1978), Dony *et al*. (1986), Jebb (2014), Parnell & Curtis (2012), Scannell & Synnott (1987), Stace (2011), Wyse Jackson (2014) and elsewhere.

Irl RL Category: Ireland Red List Category, resulting from assessments undertaken. Category abbreviations: RE = Regionally Extinct, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern, WL = Waiting List. Definitions of IUCN Red List Categories and regionally determined settings applied here are given above and summarised in Tables 4 and 5. Taxa assessed as CR, EN and VU are considered as threatened and Red-listed.

Criteria: IUCN criteria and subcriteria giving rise to Ireland Red List Category. Descriptions and thresholds for these are provided in Tables 4 and 5.

Irl End: Ireland Endemic. A taxon is defined as endemic if its entire native distribution is confined to Ireland.

Int Sig: International Significance. Vascular plant species and subspecies for which Ireland holds or possibly holds more than 25% of the European population are indicated as "Yes" (sure that Ireland holds more than 25% of the European population), "Prob[ably]" (fairly sure that Ireland holds more than 25% of the European population) and "Poss[ibly]" (reasonable chance that Ireland holds more than 25% of the European population) – definitions adapted from Cheffings & Farrell (2005) and Stroh *et al*. (2014).

FPO 2015: Taxa protected in the Republic of Ireland under the Flora (Protection) Order, 2015 (Statutory Instrument No. 365 of 2015) are indicated.

Schd 8 NI: Taxa protected in Northern Ireland under Schedule 8 of the Wildlife (Northern Ireland) Order 1985, as amended by the Wildlife and Natural Environment Act (Northern Ireland) 2011, are indicated.

Eur/Glob Red Lists: Red List status of taxa in Europe (E) as given in the *European Red List of Vascular Plants* (Bilz *et al*. 2011), and globally (G) as given in version 2016-2 of *The IUCN Red List of Threatened Species* (IUCN 2016b).

Irl RDB: Red Data Book status of taxa in Ireland as given in Curtis & McGough (1988). Abbreviations for IUCN Threat Categories from Curtis & McGough (1988, pp. 25–26, 37): EX (Extinct) = the species is considered extinct on the island; E (Endangered) = taxa in danger of extinction and whose survival is unlikely if causal factors continue operating; V (Vulnerable) = taxa believed to move into the Endangered category in the near future if causal factors continue operating; R (Rare) = taxa with small populations that are not at present endangered or vulnerable, but are at risk; IN (Indeterminate) = the status of the species on the island is uncertain and cannot accurately be determined at this time; NT (Not Threatened) = the species is not rare or threatened as it now occurs in more than 10, 10 km squares or it has not shown a significant decline since 1970.

GB RL: Red List status of taxa in Great Britain as given in Cheffings & Farrell (2005) and updated in Leach (2007; 2010), Leach & Walker (2011; 2013; 2015), Stroh *et al*. (2014) and http://bsbi.org/RedList2010.xlsx. Category abbreviations are as defined elsewhere in this Red List, except PL = Parking List, which covers taxa that, for a variety of reasons, were rejected from the GB Red List analysis.

En RL: Red List status of taxa in England as given in Stroh *et al*. (2014). Category abbreviations are as defined elsewhere in this Red List.

Wl RL: Red List status of taxa in Wales as given in Dines (2008). Category abbreviations are as defined elsewhere in this Red List, except NA = Not Applicable.

Comments: This includes a) authorities, following IPNI (2016) abbreviations, for names of taxa not included in Stace (2011), b) former or alternative scientific names by which taxa may be more familiarly known, c) archaeophyte/uncertain/disputed status (except where indicated, all taxa are considered to be native), d) notes on the subspecies present in Ireland (from Sell & Murrell (1996; 2006; 2009; 2014) and Stace (2011)), e) comments on the occurrence, range and abundance of taxa, plausible threats, and the need for research/surveys that have informed the Red List assessments. Note that not all taxa assessed as LC are commented on

and for these (and, indeed, for others for which there are notes) information on the assessments may be gained by examining, in conjunction with Tables 4 and 5, the criteria (**Criteria** column) which gave rise to the assigned Ireland Red List categories. Distribution maps are not provided but are available in the published atlases and other publications containing mapping referred to above, and from various on-line resources, such as at http://bsbi.org/maps (recommended as the first port-of-call), http://www.brc.ac.uk/plantatlas/, http://www.biodiversityireland.ie/, http://www.gbif.org, http://www.habitas.org.uk/flora/plantgroups.asp, https://data.nbn.org.uk/, amongst others, f) other relevant information and references (in particular those published since *The Irish Red Data Book. 1 Vascular Plants* (Curtis & McGough 1988)). The works of Colgan & Scully (1898), Kent (1967), O'Sullivan (1973), Praeger (1901; 1934a), Preston & Croft (1997), Preston *et al*. (2002), Reynolds (2002), Sell & Murrell (1996; 2006; 2009; 2014), Simpson (1960), Stace *et al*. (2015), Stewart *et al*. (1994), Wigginton (1999) and Wyse Jackson (2014) contain large bibliographies and are good sources for references containing information on taxa. In addition, many useful references and other information are to be found in various other sources such as Rich & Jermy (1998), Scannell & Synnott (1989), the BSBI Handbook series, the *Journal of Ecology* Biological Flora of the British Isles series, in Irish county floras (some of which contain extensive bibliographies), Rare Plant Registers and scientific journals, and on-line resources such as http://www.habitas.org.uk/literature/index.html, http://rbg-web2.rbge.org.uk/BSBI/intro.php (*BSBI Abstracts* in searchable form), http://www.bsbi.org/species-accounts, http://www.habitas.org.uk/priority/splist.asp?Type=Vascular%20Plants, amongst many others.

RED LIST OF IRISH VASCULAR PLANTS

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Achillea maritima	CR	A2a+3c; C2a(i,ii); D			Yes			EN	EX	EX	EX	Formerly known as *Otanthus maritimus*. Irish plants are referable to subsp. *atlantica* (Chrtek & B. Slavik) Ehrend. & Y.P. Guo (see Euro+Med (2006–)). Currently known from two sites in Co. Wexford – Tacumshin, where the species became extinct (last seen 1983), but was reintroduced in 2003 (one plant remaining in 2014) and Lady's Island, which has shown catastrophic declines in recent years due to competition with *Ammophila arenaria* (32 plants in three small patches remaining in 2014). Details of the ecology and status of the species in 1980 are provided by Carter *et al*. (1981).
Achillea millefolium	LC						LC (G)		LC	LC	LC	Irish plants are referable to subsp. *millefolium* (Sell & Murrell 2006).
Achillea ptarmica	LC						LC (G)		LC	LC	LC	
Adiantum capillus-veneris	LC						LC (G)		LC	LC	LC	The largest populations occur in the Aran Islands, Co. Galway and the Burren, Co. Clare.
Adoxa moschatellina	CR	B2ab(v); C2a(i,ii); D				Yes		V	LC	LC	LC	Listed as neophyte in Jebb (2014) but regarded by Beesley (2006) as native in Co. Antrim – assessment based on its occurrence here. In Co. Antrim it occurs in a single site in scrubby woodland on the slope of Cave Hill, where it is confined to one main colony covering an area of about one square metre (http://www.habitas.org.uk/priority/species.asp?item=4336). Beesley (2006) notes it to be thriving here in 2003.
Aegopodium podagraria	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Aethusa cynapium	LC								LC	LC	LC	Archaeophyte (Jebb 2014). Irish plants are referable to subsp. *cynapium* (Stace 2011).
Agrimonia eupatoria	LC								LC	LC	LC	Irish plants are referable to subsp. *eupatoria* (Sell & Murrell 2014). While there have been losses of sites for this species, it is still widespread in Ireland and present in a large number of locations, at many of which it occurs in abundance.
Agrimonia procera	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Agrostemma githago	WL							EX	WL	WL	WL	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). The distribution of plants of archaeophyte origin is unclear due to the occurrence of populations derived from wildflower seed-mix sources; research is required to clarify which, if any, populations derive from archaeophyte stock.
Agrostis canina	LC						LC (E,G)		LC	LC	LC	
Agrostis capillaris	LC								LC	LC	LC	
Agrostis gigantea	LC								LC	LC	LC	Native or alien (Jebb 2014); archaeophyte (Williamson *et al*. 2008). Irish plants are referable to subsp. *gigantea* (Sell & Murrell 1996). While its native/alien status is uncertain, this species is widespread in Ireland and not showing a significant decline, and an assessment of LC is appropriate.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Agrostis stolonifera	LC						LC (E,G)		LC	LC	LC	
Agrostis vinealis	LC								LC	LC	LC	
Aira caryophyllea	LC								LC	LC	LC	Both subsp. *caryophyllea* and subsp. *multiculmis* have been reported from Ireland, but their taxonomic status and relative distributions are unclear and disputed.
Aira caryophyllea subsp. *caryophyllea*	WL											Research and surveys are required to clarify the taxonomic status, distribution, abundance and conservation status of this subspecies in Ireland.
Aira caryophyllea subsp. *multiculmis*	WL											Research and surveys are required to clarify the taxonomic status, distribution, abundance and conservation status of this subspecies in Ireland.
Aira praecox	LC								LC	LC	LC	
Ajuga pyramidalis	VU	D1				Yes		R	VU	CR		Recent counts from known Irish sites provide a total population estimate of less than 1000 individuals. Details of sites for the species in Ireland are in Beesley (2006), Forbes (1989), Hackney (1992), Holyoak (2005), Scannell & Jebb (2000), Webb (1980) and Webb & Scannell (1983).
Ajuga reptans	LC								LC	LC	LC	
Alchemilla alpina	VU	D1						R	LC	LC		Recent counts from known Irish sites provide a total population estimate of less than 1000 individuals.
Alchemilla filicaulis	LC								LC	LC	LC	
Alchemilla filicaulis subsp. *filicaulis*	WL								LC	DD	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Alchemilla filicaulis subsp. *vestita*	LC								LC	LC	LC	
Alchemilla glabra	LC								LC	LC	LC	
Alchemilla glaucescens	VU	D2							LC	LC		In Ireland known only from two areas in Co. Leitrim where it occurs in species-rich limestone grassland. It was recorded as new to Ireland (under the name *A. hybrida* Mill.) in Hall (1938) based on a specimen at **DBN** collected from Co. Leitrim by R.Ll. Praeger in 1933. Sites for the species are vulnerable to agricultural improvement/land reclamation and to other changes in land use/ management.
Alchemilla xanthochlora	LC						LC (G)		LC	LC	LC	
Alisma lanceolatum	LC						LC (E,G)		LC	LC	LC	
Alisma plantago-aquatica	LC						LC (E,G)		LC	LC	LC	
Alliaria petiolata	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Allium ampeloprasum	LC						LC (E)		LC	LC	VU	Listed as archaeophyte by Williamson *et al*. (2008) and var. *babingtonii* as native or alien (Jebb 2014). Records of the neophyte var. *ampeloprasum* are excluded from the assessment. Although the status of var. *babingtonii* is uncertain, this taxon is widespread in Ireland and not showing a significant decline, and an assessment of LC is appropriate.
Allium schoenoprasum	VU	D2			Yes		LC (E)	R	LC	LC	LC	Native or alien (Jebb 2014). While most of the Irish populations are clearly neophyte in origin, having become established from gardens and elsewhere, several found on limestone pavement sites in the west have a strong claim to native status. Curtis & McGough (1988) and Parnell & Curtis (2012) consider the species to be indigenous on the shores of Lough Mask, a view that is followed here. Pearman (2013) is dubious about according native status to the Irish populations and it is considered that further investigation of the native/alien status of Irish populations of the species is merited. The assessment excludes neophyte populations.
Allium ursinum	LC						LC (E)		LC	LC	LC	
Allium vineale	LC						LC (E)		LC	LC	LC	An introduction in the northern part of its range in Ireland, native in the south (Preston *et al*. 2002).
Alnus glutinosa	LC						LC (G)		LC	LC	LC	Morphological variation displayed by the species in Ireland is investigated by Parnell (1994).
Alopecurus aequalis	NT	A2c+3c			Yes		LC (E,G)		LC	LC	LC	First recorded in Ireland in 1992, from Co. Cork (FitzGerald 1993a; 1997) and subsequently recorded in Cos Clare, Galway and Waterford (Goodwillie 1999b; Green 2008a). Decline in Area of Occupancy; future population reduction suspected.
Alopecurus geniculatus	LC						LC (E)		LC	LC	LC	
Alopecurus pratensis	LC						LC (E)		LC	LC	LC	
Althaea officinalis	NT	A2c							LC	NT	LC	Archaeophyte (Jebb 2014). Decline in Area of Occupancy.
Ammophila arenaria	LC								LC	LC	LC	Irish plants are referable to subsp. *arenaria* (Sell & Murrell 1996).
Anacamptis morio	VU	A2c				Yes	NT (E)	V	NT	VU	LC	Formerly known as *Orchis morio*; Sell & Murrell (1996) refer Irish plants to subsp. *morio* under this name. Records from Cos Cork, Down and Galway, well outside the main area of distribution of the species in Ireland, are noted by Day & Hackney (2004), Hawes (1993) and Roden (1993). Decline in Area of Occupancy.
Anacamptis pyramidalis	LC						LC (E)		LC	LC	LC	
Anagallis arvensis	LC								LC	LC	LC	
Anagallis arvensis subsp. *arvensis*	LC								LC	LC	LC	
Anagallis arvensis subsp. *foemina*	WL								LC	DD	RE	Archaeophyte or neophyte (Jebb 2014); neophyte (Williamson *et al*. 2008). Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Anagallis tenella	LC								LC	LC	LC	
Anchusa arvensis	NT	A2c							LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Area of Occupancy.
Andromeda polifolia	LC					Yes	LC (G)	NT	LC	NT	LC	
Anemone nemorosa	LC								LC	LC	LC	
Angelica sylvestris	LC						LC (G)		LC	LC	LC	
Anisantha sterilis	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Formerly known as *Bromus sterilis*.
Antennaria dioica	LC								LC	VU	LC	
Anthemis arvensis	WL							EX	EN	EN	EN	Archaeophyte (Jebb 2014); neophyte (Williamson *et al*. 2008). The distribution of plants of archaeophyte origin is unclear due to the occurrence of populations derived from wildflower seed-mix sources; research is required to clarify which, if any, populations derive from archaeophyte stock. Some recent records may refer to the similar neophyte alien, *Anthemis austriaca*.
Anthemis cotula	WL								VU	VU	VU	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). A rare casual that was formerly widespread and frequent in cultivated ground and elsewhere (Reynolds 2002). In recent years it has been recorded in Ireland from disturbed ground associated with ports, on roadsides, sandy tracks, in areas of newly-sown grass and as a weed of arable crops. While some of the recently recorded populations certainly originated from seed-mixes it is not clear which arose from the soil seed-bank (and potentially archaeophyte stock); Akeroyd *et al*. (2011) suggest that it may persist in the soil seed-bank on Sherkin Island, Co. Cork and this would also seem likely to be the case elsewhere. Research and surveys are required to clarify the distribution, abundance, provenance of populations and conservation status of this species in Ireland.
Anthoxanthum odoratum	LC								LC	LC	LC	
Anthriscus caucalis	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Anthriscus sylvestris	LC								LC	LC	LC	
Anthyllis vulneraria	LC								LC	LC	LC	
Anthyllis vulneraria subsp. *lapponica*	LC								LC	WL	WL	
Anthyllis vulneraria subsp. *vulneraria*	LC								LC	LC	LC	Assumed to be LC, as species.
Aphanes arvensis	LC								LC	LC	LC	
Aphanes australis	LC								LC	LC	LC	Formerly known as *Aphanes inexspecta*, *A. microcarpa*.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Apium graveolens	LC						LC (E,G)		LC	LC	LC	Native Irish plants are referable to var. *graveolens* (treated at the subspecific rank by Sell & Murrell (2009)).
Apium inundatum	LC						LC (E,G)		LC	VU	LC	*Helosciadium inundatum* (L.) W.D.J. Koch in Ronse *et al*. (2010).
Apium nodiflorum	LC						LC (E,G)		LC	LC	LC	*Helosciadium nodiflorum* (L.) W.D.J. Koch in Ronse *et al*. (2010).
Aquilegia vulgaris	LC								LC	LC	LC	Native, with small original range, now widespread (Jebb 2014). Assessment excludes records of known non-native occurrences.
Arabidopsis petraea	VU	D2			Yes			R	VU		EN	Formerly known as *Arabis petraea*, *Cardaminopsis petraea*. Known only from two sites in Cos Leitrim and Tipperary.
Arabidopsis thaliana	LC								LC	LC	LC	
Arabis hirsuta	LC								LC	NT	LC	While plants of sand dunes and rocks on the west coast previously distinguished as a separate species (*A. brownii*) may deserve subspecific status (Stace 2011), these are treated at the varietal level in Sell & Murrell (2014). Further research is recommended.
Arbutus unedo	NT	A2c+3c									NA	Garvey & Flynn (1995) provide details of sites at "lesser stations" in south-west Ireland. Population declines recorded at sites in Cos Cork, Kerry and Sligo, associated with a decline in habitat quality; future population reduction suspected.
Arctium lappa	WL								LC	LC	LC	Jebb (2014) lists the occurrence of this species in Ireland as "error? = Probable errors"; Williamson *et al*. (2008) consider it to be archaeophyte. Research and surveys are required to clarify the occurrence, taxonomic status, distribution, abundance and conservation status of this species in Ireland.
Arctium minus	LC								LC	LC	LC	
Arctium minus subsp. *minus*	WL								LC	LC		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Arctium minus subsp. *pubens*	WL								LC	LC		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Arctium nemorosum	WL								WL			Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Arctostaphylos uva-ursi	LC						LC (E)		LC	NT		
Arenaria ciliata	VU	D2	Yes[1]	Yes[2]				R				[1]Irish plants are referable to the endemic subsp. *hibernica* (Stace 2005). [2]Subsp. *hibernica* only. The taxonomic relationships of this and other European taxa in the *Arenaria ciliata* complex were investigated by Wyse Jackson & Parnell (1987). The Irish plant is restricted to the Ben Bulben range of Cos Sligo and Leitrim, where recent research by Dang *et al*. (2012) suggests it may have persisted for over 20,000 years, i.e. predating the last glacial maximum.
Arenaria leptoclados	LC								LC	LC	LC	Formerly known as *Arenaria serpyllifolia* subsp. *leptoclados*.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Arenaria norvegica	VU	D1						IN	VU	EN		Irish plants are referable to subsp. *norvegica* (Stace 2011). Details of the site for this species in Co. Clare and the history of the species in Ireland are in Heslop Harrison *et al*. (1961), Walker *et al*. (2008; 2009; 2013) and Webb & Scannell (1983). Recent surveys in 2009 and 2012 provide a total population estimate of 250–1000 individuals.
Arenaria serpyllifolia	LC								LC	LC	LC	
Arenaria serpyllifolia subsp. *lloydii*	WL								WL	WL		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Stroh *et al*. (2015) state that it is now thought to be [perhaps only] a robust coastal ecotype of *A. serpyllifolia*.
Arenaria serpyllifolia subsp. *serpyllifolia*	LC								LC	LC	LC	
Armeria maritima	LC								LC	LC	LC	Irish plants are referable to subsp. *maritima* (Stace 2011).
Armoracia rusticana	LC						LC (E,G)		LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Arrhenatherum elatius	LC						LC (E)		LC	LC	LC	Both var. *elatius* and var. *bulbosum* occur; these are treated as subspecies by some authors, e.g. Sell & Murrell (1996).
Artemisia absinthium	VU	A2c; B2ab(i); D1							LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Declines in Area of Occupancy and Extent of Occurrence. Best available information provides a total population estimate of less than 1000 individuals.
Artemisia maritima	LC					Yes			LC	NT	LC	Formerly known as *Seriphidium maritimum*. Irish plants are referable to subsp. *maritima* (Sell & Murrell 2006).
Artemisia vulgaris	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Arum maculatum	LC								LC	LC	LC	Irish plants would appear to be referable to subsp. *maculatum* (Sell & Murrell 1996).
Asparagus prostratus	EN	C2a(i); D			Yes			R	EN	VU	CR	Formerly known as *Asparagus officinalis* subsp. *prostratus*. Declining numbers of individuals in several of the six known sites; recent surveys indicate a total population of less than 250 individuals. Rich *et al*. (2006) provide details of the vegetation communities and habitats of this western European endemic throughout its range.
Asperula cynanchica	LC								LC	LC	LC	Plants of sand dunes on the west coast distinguished by various authors at the rank of subspecies or species (*A. cynanchica* subsp. *occidentalis*/*A. occidentalis* Rouy) are currently thought to be best placed in this species at the varietal rank (Stace 2011).
Asplenium adiantum-nigrum	LC								LC	LC	LC	
Asplenium ceterach	LC								LC	LC	LC	Formerly known as *Ceterach officinarum*.
Asplenium marinum	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Asplenium obovatum	VU	A3c; B2ab(iii); D1						V	NT	NT	LC	Formerly known as *Asplenium billotii*. Irish plants are referable to subsp. *lanceolatum* (Stace 2011). Recent surveys provide a total population estimate of less than 1000 individuals. Sites and individuals have been lost due to developments, loss of habitat and habitat degradation (competition with more vigorous species, shading, etc.), and these are likely to continue to threaten the species into the future.
Asplenium onopteris	VU	A2c; B2ab(i)									NA	Irish Spleenwort – the species has not been recorded as a native from Great Britain. Decline in Area of Occupancy and Extent of Occurrence.
Asplenium ruta-muraria	LC								LC	LC	LC	
Asplenium scolopendrium	LC								LC	LC	LC	Formerly known as *Phyllitis scolopendrium*.
Asplenium septentrionale	VU	D1			Yes			R	NT	VU	LC	Waldren (1994) provides details of the sole native Irish site, in Co. Galway, where it was originally discovered by Bannister & McAllister (1966) in 1965. Recent surveys provide a total population estimate of between 250 and 1000 individuals.
Asplenium trichomanes	LC								LC	LC	LC	
Asplenium trichomanes subsp. *quadrivalens*	LC								LC	LC	LC	
Asplenium trichomanes subsp. *trichomanes*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. While it is likely to be under-recorded it may also be genuinely rare.
Asplenium viride	LC								LC	LC	LC	Formerly known as *Asplenium trichomanes-ramosum*.
Aster tripolium	LC								LC	LC	LC	Irish plants are referable to subsp. *tripolium* (Sell & Murrell 2006).
Astragalus danicus	NT	A2c+3c			Yes			R	EN	EN		Restricted to sites in the Aran Islands, Co. Galway. Decline in Area of Occupancy; future population reduction suspected.
Athyrium filix-femina	LC								LC	LC	LC	
Atriplex glabriuscula	LC								LC	LC	LC	
Atriplex laciniata	LC								LC	LC	LC	
Atriplex littoralis	LC								LC	LC	LC	
Atriplex longipes	WL								LC	LC	LC	A recently recorded species in Ireland known from a handful of sites – see Green (2002; 2008a) for details. It is likely to be under-recorded. Hybrids involving two other *Atriplex* species are also recorded. Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Atriplex patula	LC								LC	LC	LC	
Atriplex portulacoides	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Atriplex prostrata	LC								LC	LC	LC	
Avena fatua	LC						LC (E)		LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Avenula pubescens	LC								LC	LC	LC	Formerly known as *Helictotrichon pubescens*; Sell & Murrell (1996) refer Irish plants to subsp. *pubescens* under this name.
Baldellia ranunculoides	LC						NT (E,G)		NT	VU	LC	
Baldellia ranunculoides subsp. *ranunculoides*	LC								NT	LC	LC	Assumed to be LC, as species.
Baldellia ranunculoides subsp. *repens*	WL								DD		VU	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. See Jones (2015) for details.
Ballota nigra	NT	A2c							LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Irish plants are referable to subsp. *meridionalis* (Stace 2011). Decline in Area of Occupancy.
Barbarea vulgaris	LC						LC (E,G)		LC	LC	LC	
Bellis perennis	LC								LC	LC	LC	
Berula erecta	LC						LC (E,G)		LC	LC	LC	
Beta vulgaris	LC						LC (E)		LC	LC	LC	The sole native subspecies in Ireland is subsp. *maritima* (Stace 2011).
Betonica officinalis	NT	A2c			Yes			V	LC	LC	LC	Formerly known as *Stachys officinalis*. Decline in Area of Occupancy.
Betula pendula	LC						LC (G)		LC	LC	LC	Widely planted and rarer as a native than available records would suggest – see comments in Kelly (2003). Webb & Scannell (1983) consider it to be greatly over-recorded in Ireland due to confusion with glabrous forms of *B. pubescens*; they note that it is relatively rare as a native, "found mainly on the margins of lowland bogs or by limestone lakes" and "usually naturalized from planted trees" elsewhere.
Betula pubescens	LC						LC (G)		LC	LC	LC	
Betula pubescens subsp. *pubescens*	LC								WL	WL		
Betula pubescens subsp. *tortuosa*	LC								WL	WL		The assessment is based on available records for this "upland race" (Stace *et al*. 2015) – it is recorded mainly from Ulster, but there are also records from Co. Cork. It is considered likely to be under-recorded. It is of note that Parnell & Curtis (2012) state that there are probably two subspecies present in Ireland, but that they cannot be named with confidence and that Stace (2011) considers it to be a "rather ill-defined taxon, but worth recognising due to its distinctive distribution"; further investigation of the taxonomic and conservation status of this taxon in Ireland is merited.
Bidens cernua	LC						LC (E,G)		LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Bidens tripartita	LC						LC (E,G)		LC	LC	LC	
Blackstonia perfoliata	LC								LC	LC	LC	Irish plants are referable to subsp. *perfoliata* (Sell & Murrell 2009).
Blechnum spicant	LC								LC	LC	LC	
Blysmus rufus	NT	A2c							LC	NT	VU	Decline in Area of Occupancy.
Bolboschoenus maritimus	LC						LC (E,G)		LC	LC	LC	Formerly known as *Scirpus maritimus*.
Botrychium lunaria	NT	A2c							LC	VU	LC	Doyle (1985; 1987) provides notes on the ecology of the species at Irish sites. Decline in Area of Occupancy.
Brachypodium pinnatum	LC								LC	LC	WL	The possible occurrence in Ireland of the similar *B. rupestre* requires investigation.
Brachypodium sylvaticum	LC								LC	LC	LC	
Brassica nigra	LC						LC (E)		LC	LC	LC	The native/alien status of this species in Ireland is uncertain. It is listed as native in Parnell & Curtis (2012) and Scannell & Synnott (1987); it is not listed as an alien in Reynolds (2002). Stace (2011) considers it to be probably native, while Webb *et al*. (1996) note it to be an introduction. Preston *et al*. (2002) state that its native range is uncertain and Jebb (2014) lists it as native or alien. It is suspected by Micheline Sheehy Skeffington to be an archaeophyte and a relict of cultivation. While Scannell & Synnott (1987) consider it to be native in eleven vice-counties they also note it to be casual in six, and certainly there is little doubt that some of the records for the species have arisen from recent introductions. Some records were also based on plants of the superficially similar neophyte *Hirschfeldia incana* – see Doogue *et al*. (1998) and Rich (1988). As the species is widespread and not showing a significant decline (indeed it would appear to be somewhat under-recorded) an assessment of LC is appropriate. Further consideration of the status of the species and of individual records is merited.
Brassica rapa	LC						DD (E)		LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). The sole archaeophyte subspecies in Ireland is subsp. *campestris* (Stace 2011).
Briza media	LC								LC	NT	LC	Irish plants are referable to subsp. *media* (Sell & Murrell 1996).
Bromopsis erecta	NT	A2c							LC	LC	LC	Formerly known as *Bromus erectus*. Decline in Area of Occupancy.
Bromopsis ramosa	LC								LC	LC	LC	Formerly known as *Bromus ramosus*.
Bromus commutatus	NT	A2c+3c							LC	LC	LC	Treated as a species in Stace (2011), but with a note that it is perhaps better placed as a subspecies of *Bromus racemosus*. Cope & Gray (2009) merge the two species entirely, a treatment followed by Parnell & Curtis (2012). Decline in Area of Occupancy; future population reduction suspected.
Bromus hordeaceus	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Bromus hordeaceus subsp. *ferronii*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. *B. hordeaceus* is morphologically extremely variable and this taxon may not merit subspecific status – see Cope & Gray (2009) and Stroh *et al*. (2015).
Bromus hordeaceus subsp. *hordeaceus*	LC								LC	LC	LC	
Bromus hordeaceus subsp. *longipedicellatus*	LC								WL	WL	WL	"Probably best treated as an ecotype" (Stroh *et al*. 2015); "only a variant" (Cope & Gray 2009).
Bromus hordeaceus subsp. *thominei*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. *B. hordeaceus* is morphologically extremely variable and this taxon may not merit subspecific status – see Cope & Gray (2009) and Stroh *et al*. (2015).
Bromus racemosus	NT	A2c+3c						R	LC	LC	LC	Decline in Area of Occupancy; future population reduction suspected. See also *Bromus commutatus*, above.
Bromus secalinus	WL								VU	NT	NT	Archaeophyte (Jebb 2014); neophyte (Williamson *et al*. 2008). Considered to be an archaeophyte in Great Britain (Preston *et al*. 2004). A rare weed of arable crops that is mostly of little more than casual occurrence in Ireland (Colgan & Scully 1898; Reynolds 2002). In recent years single plants have been recorded from disturbed ground near Belfast and at Dublin Port (Reynolds 2002), but there have also been a few records from elsewhere associated with cereal crops. It is not clear whether these recently recorded plants were derived from the soil seed-bank (potentially archaeophyte stock) or whether they arrived more recently as contaminants of seed sown for crops. Reynolds (2002) notes it to be "probably introduced with agricultural seed or grain" and it is considered likely that this is the origin of at least some of the records. Research and surveys are required to clarify the distribution, abundance, provenance of populations and conservation status of this species in Ireland. Any review of the species in Ireland could usefully also consider records for *B. pseudosecalinus* – these two species are regarded by Cope & Gray (2009) as being hardly distinguishable on morphological grounds.
Butomus umbellatus	LC						LC (E,G)		LC	LC	VU	Scannell & Synnott (1987) and Jebb (2014) list the species as native, and Parnell & Curtis (2012) as native in the west and south but introduced in the north. O'Mahony's (2009) experience of the species in Munster "strongly suggests that it is indigenous in these localities". Preston *et al*. (2002) map all Irish records as alien.
Cakile maritima	LC								LC	LC	LC	Irish plants are referable to subsp. *maritima* (Rich 1991; Sell & Murrell 2014); subsp. *integrifolia*, to which Irish plants have been referred, is treated as a synonym of subsp. *maritima* (see http://tropicos.org).
Calamagrostis epigejos	VU	A2c; D1			Yes	Yes		R	LC	LC	LC	Decline in Area of Occupancy. Recent surveys provide a total population estimate of less than 1000 individuals.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Calamagrostis stricta	EN	A2c; B2ab(i,ii,iv)				Yes		V	VU	VU		In Ireland this species is known only from damp meadows close to the shores of Lough Neagh and Lough Beg, formerly in all five counties bordering these lakes. See http://www.bsbidb.org.uk/maps, Beesley (2006), Day & Hackney (2004), Faulkner (2015), Hackney (1992), Harron (1986), McNeill (2010) and http://www.habitas.org.uk/priority/species.asp?item=2632 for details of the history of occurrence and records for this species. It has declined significantly due to drainage and land reclamation, and since 1987 has been recorded from only two sites, on the shores of these lakes. Crackles (1997) provides details of the taxonomy, biology, phytogeography and history of the species in Great Britain and Ireland.
Callitriche brutia	LC						LC (E,G)		LC	LC	LC	
Callitriche brutia subsp. *brutia*	LC								LC	LC	LC	Formerly treated as a separate species, *Callitriche brutia*. Lansdown (2008) places it at varietal rank. Considered likely to be under-recorded.
Callitriche brutia subsp. *hamulata*	LC								LC	LC	LC	Formerly known as *Callitriche hamulata*. Lansdown (2008) places it at the varietal rank. Considered likely to be under-recorded.
Callitriche hermaphroditica	LC						LC (E,G)		LC	LC	VU	Lansdown (2008) notes that the range of this species is contracting and that this decline is mainly due to habitat degradation, and goes on to say: "It is extinct in Belgium, there is strong evidence for a decline in Britain and Ireland, and it has been lost from many sites throughout its range. The evidence would suggest that this decline mainly involves subsp. *macrocarpa*, but further research is needed to establish not only the true taxonomic status of the infraspecific taxa but also whether the decline applies to both taxa or just to one of them." While the species is LC in Ireland, England (Stroh *et al*. 2014) and Great Britain (Cheffings & Farrell 2005) it is assessed as VU in Wales (Dines 2008) and monitoring of its distribution and status is recommended.
Callitriche hermaphroditica subsp. *hermaphroditica*	WL								WL			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Its occurrence in Ireland is noted by Lansdown (2008).
Callitriche hermaphroditica subsp. *macrocarpa*	WL								WL			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Its occurrence in Ireland is noted by Lansdown (2008).
Callitriche obtusangula	LC						LC (E)		LC	LC	LC	
Callitriche palustris	VU	D2					LC (E,G)		VU			First recorded in Ireland in 1999, from a turlough in Co. Galway (Bruinsma 2003; Lansdown & Bruinsma 1999). It is now known from four sites in Co. Galway (all turloughs) and one in Co. Clare.
Callitriche platycarpa	LC						LC (E,G)		LC	LC	LC	
Callitriche stagnalis	LC						LC (E,G)		LC	LC	LC	
Callitriche truncata	VU	D2			Yes		LC (E,G)	R	LC	LC	LC	Irish plants are referable to subsp. *occidentalis* (Stace 2011). In Ireland it is known only from the River Slaney, Co. Wexford (Booth 1975; Lansdown 2008; Preston & Croft 1997).
Calluna vulgaris	LC								LC	NT	LC	See Nelson (2011) for details.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Caltha palustris	LC						LC (G)		LC	LC	LC	
Calystegia sepium	LC						LC (G)		LC	LC	LC	
Calystegia sepium subsp. *roseata*	LC			Poss					LC	LC	LC	
Calystegia sepium subsp. *sepium*	LC								LC	LC	LC	
Calystegia soldanella	LC								LC	VU	LC	
Camelina sativa	WL						DD (E)		LC	LC	NA	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). Stace (2011) notes that this is now only of casual occurrence. While likely to be extinct in Ireland other than as a casual of neophyte origin it is possible that some occurrences might derive from archaeophyte stock and research to clarify this is required. It should be borne in mind that at least three other similar species of *Camelina* have been recorded from Ireland (Reynolds 2002; Rich 1991; 1995) – these are all considered to be neophytes.
Campanula rotundifolia	LC								LC	NT	LC	
Campanula rotundifolia subsp. *montana*	WL								LC	NT		Described by Sell & Murrell (2006) as occurring "mainly in Ireland, western Scotland, Isle of Man and extreme south-west England and may be endemic." Stace (2011) describes it as occurring "Mostly in uplands". Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Campanula rotundifolia subsp. *rotundifolia*	LC								LC	DD		Assumed to be LC, as species. Described by Sell & Murrell (2006) as "the common subspecies".
Campanula trachelium	LC							V	LC	LC	LC	Irish plants are referable to subsp. *trachelium* (Sell & Murrell 2009). Smith & Waldren (2013) include data on population size for nine sites in Ireland. Goodwillie (1999a) records the species, apparently native, at a site in Co. Clare – a notable extension in range.
Capsella bursa-pastoris	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Cardamine amara	LC						LC (E)	R	LC	LC	LC	
Cardamine flexuosa	LC								LC	LC	LC	
Cardamine hirsuta	LC								LC	LC	LC	
Cardamine impatiens	EN	D			Yes			R	NT	LC	LC	Native, with small original range, now widespread (Jebb 2014). Known as a native from a single esker site in Co. Westmeath (Breen *et al*. 1984; Curtis & McGough 1988) – a comprehensive survey of the site in 2014 recorded 190 individuals. Further investigation of the origin and status of the Ballyvaughan, Co. Clare population is required – see Scannell & Jebb (2000), Webb (1982) and Webb & Scannell (1983) for details.
Cardamine pratensis	LC						LC (E)		LC	LC	LC	Three subspecies are listed by Stace (2011) as being the most likely to occur in Great Britain and Ireland; their taxonomic status and possible presence in Ireland require investigation.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Carduus crispus	LC								LC	LC	LC	Irish plants are referable to subsp. *multiflorus* (Stace 2011). Parnell & Curtis (2012) note that many Irish plants appear physically different to British ones and that further investigation of the variation of *C. crispus* and the similar *C. acanthoides* across Europe is required.
Carduus tenuiflorus	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Carex acuta	NT	A2c					LC (E,G)		LC	LC	LC	Decline in Area of Occupancy.
Carex acutiformis	LC						LC (E,G)		LC	LC	LC	
Carex appropinquata	NT	A2c					LC (E,G)		NT	LC		David (1990) provides a useful summary of the distribution of sites for the species in Ireland, with an indication of the number of individuals in each. Decline in Area of Occupancy.
Carex aquatilis	LC						LC (E,G)		LC	LC	LC	
Carex arenaria	LC								LC	LC	LC	
Carex bigelowii	LC					Yes			LC	LC	LC	Irish plants are referable to subsp. *bigelowii* (Sell & Murrell 1996).
Carex binervis	LC								LC	LC	LC	
Carex buxbaumii	RE						LC (G)		VU			Last recorded in the wild in Ireland in 1886. Material from the the sole-recorded site, Harbour Island, one of the Three Islands, Lough Neagh, Co. Antrim is in cultivation at the National Botanic Gardens, Glasnevin (see Synnott 1992a). A fine watercolour by George Du Noyer of a specimen collected from Three Islands is in the herbarium there – reproduced in Hackney (1992). Beesley (2006), Hackney (1992), Harron (1986) and Praeger (1938) detail the discovery and history of recording of the species in Ireland.
Carex canescens	LC						LC (E,G)		LC	LC	LC	Formerly known as *Carex curta*.
Carex caryophyllea	LC								LC	LC	LC	
Carex demissa	LC								LC	LC	LC	Formerly known as *Carex viridula* subsp. *oedocarpa*.
Carex depauperata	CR	A2a; B2ab(v); C2a(i,ii); D			Yes			R	EN	EN	RE	Discovered new to Ireland in 1973 (O'Mahony 1976) from woodland in the River Blackwater valley, Co. Cork. Twenty tussocks were recorded in 1989 but since then the population has seriously declined, with only seven tussocks noted in 1996 (O'Mahony 1997), five in 1998 (O'Mahony 1999; Rich & Birkinshaw 2001), two in 2000 (O'Mahony 2001c), one in 2002 (O'Mahony 2003b), two in 2005 (O'Mahony 2006b) and one in 2012 (NPWS survey). Genetic variation in samples of the species from England, France, Ireland and Spain was investigated by Fay *et al*. (2003), with the Irish sample proving to be the most distinct of the seven tested.
Carex diandra	LC						LC (G)		NT	VU	LC	
Carex dioica	LC								LC	LC	LC	
Carex distans	LC						LC (G)		LC	LC	LC	

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Carex disticha	LC						LC (E)		LC	LC	LC	
Carex divisa	EN	A2c			Yes		LC (G)	EX	VU	LC	EN	The species was considered likely to be extinct in Ireland (Curtis & McGough 1988) but was subsequently re-discovered in three sites in Cos Kilkenny and Wexford in 1990 (Curtis & FitzGerald (1994). However, since 1992 the species has not been refound at one of these sites despite repeated searches and it has also been lost due to extensive land drainage from a considerable portion of a second site, the largest of the three recorded by Curtis & FitzGerald (1994). The remaining populations are threatened by a variety impacts (see Curtis & FitzGerald (1994)) including drainage, wetland/saltmarsh reclamation, developments, reconstruction of sea walls, conversion of grazing marshes to arable, re-seeding, discontinuation of the traditional management [of occasional influx of salt water and regular cycles of grazing and trampling] and winter inundation.
Carex divulsa	LC								LC	LC	LC	Irish plants are referable to subsp. *divulsa* (Stace 2011).
Carex echinata	LC						LC (G)		LC	NT	LC	
Carex elata	LC						LC (E,G)		LC	NT	LC	
Carex elongata	NT	A2c						NT	LC	NT	EN	See Faris (1974), Faulkner (2015), Hackney (1992), Harron (1974; 1986), McNeill (2010), Northridge *et al*. (2014) and Reilly (2001) for details of sites for the species. Decline in Area of Occupancy.
Carex extensa	LC						LC (G)		LC	LC	LC	
Carex flacca	LC								LC	LC	LC	
Carex hirta	LC								LC	LC	LC	
Carex hostiana	LC								LC	LC	LC	
Carex laevigata	LC								LC	LC	LC	
Carex lasiocarpa	LC						LC (E,G)		LC	VU	LC	
Carex lepidocarpa	LC								LC	LC	LC	Formerly known as *Carex viridula* subsp. *brachyrryncha*.
Carex lepidocarpa subsp. *jemtlandica*	WL											Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Carex lepidocarpa subsp. *lepidocarpa*	LC											Assumed to be LC, as species.
Carex leporina	LC								LC	LC	LC	Formerly known as *Carex ovalis*.
Carex limosa	LC						LC (E,G)		LC	EN	LC	
Carex magellanica	LC					Yes	LC (G)	R	LC	NT	LC	Irish plants are referable to subsp. *irrigua* (Stace 2011). Known in Ireland only from Cos Antrim, Derry and Tyrone – see Beesley (2006), Faulkner (1982), Hackney (1992), McNeill (2010) and O'Críodáin & Doyle (1985) for details.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Carex muricata	LC								LC	LC	LC	Formerly known as *C. muricata* subsp. *lamprocarpa*. Irish plants are referable to subsp. *pairae* (Stace 2011). O'Mahony (1986) provides details of Co. Cork sites for the species.
Carex nigra	LC						LC (G)		LC	LC	LC	
Carex oederi	LC						LC (G)		LC	LC	LC	Formerly known as *C. serotina*, *C. viridula* subsp. *viridula*. Represented in Ireland by subsp. *bergrothii* and perhaps subsp. *pulchella*. The identity of plants referred to subsp. *pulchella* requires confirmation – the occurrence of this taxon in Ireland is not noted in Stace (2011) and Jebb (2014) lists it as "error? = Probable errors".
Carex oederi subsp. *bergrothii*	WL											Jermy *et al*. (2007), who treat this taxon as a variety, note that in Great Britain and Ireland it has, so far, been found only in western Ireland (Cos Clare, Galway and Leitrim), where it grows in "wet, base-rich fens and lake-shores, usually with a fluctuating water regime (e.g. in turloughs)". Schmid (1983) saw material from Ireland. Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Carex otrubae	LC						LC (G)		LC	LC	LC	
Carex pallescens	LC								LC	LC	LC	
Carex panicea	LC								LC	LC	LC	
Carex paniculata	LC						LC (E,G)		LC	LC	LC	
Carex pauciflora	NT	A2c				Yes	LC (G)	V	LC	NT	CR	Known in Ireland only from Cos Antrim and Down – see Beesley (2006), Day & Hackney (2004) and Hackney (1992) for details. Decline in Area of Occupancy.
Carex pendula	LC								LC	LC	LC	Widely grown and no doubt introduced in many of its Irish stations (Colgan & Scully 1898). Following Jermy *et al*. (2007), all records are treated here as native.
Carex pilulifera	LC								LC	LC	LC	
Carex pseudocyperus	LC						LC (E,G)		LC	LC	NT	
Carex pulicaris	LC								LC	NT	LC	
Carex punctata	LC						LC (G)		LC	LC	LC	
Carex remota	LC						LC (G)		LC	LC	LC	
Carex riparia	LC						LC (E,G)		LC	LC	LC	
Carex rostrata	LC						LC (E,G)		LC	LC	LC	
Carex spicata	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Carex strigosa	LC								LC	LC	LC	
Carex sylvatica	LC								LC	LC	LC	

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Carex vesicaria	LC						LC (E,G)		LC	VU	LC	
Carlina vulgaris	LC								LC	NT	LC	
Carum carvi	WL								EN	CR	NA	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). A rare, casual of disturbed sites with few recent Irish records. It is unclear whether recently recorded plants are archaeophyte or neophyte in origin. Research and surveys are required to clarify the distribution, abundance, provenance of populations and conservation status of this species in Ireland.
Carum verticillatum	NT	A2c					LC (E,G)		LC	VU	LC	Decline in Area of Occupancy.
Catabrosa aquatica	LC						LC (E,G)		LC	VU	LC	Two varieties (var. *minor* and var. *uniflora*), sometimes treated at the subspecific rank, are recorded from Ireland.
Catapodium marinum	LC								LC	LC	LC	
Catapodium rigidum	LC								LC	LC	LC	
Catapodium rigidum subsp. *majus*	WL								WL	WL		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Catapodium rigidum subsp. *rigidum*	LC								LC	LC		Assumed to be LC, as species.
Centaurea cyanus	WL							EX	LC	LC	CR	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). The distribution of plants of archaeophyte origin is unclear due to the occurrence of populations derived from wildflower seed-mix sources; research is required to clarify which, if any, populations derive from archaeophyte stock. Assessed as extinct in Curtis & McGough (1988), but with a note added in press of recent finds in the Aran Islands, Co. Galway – see Curtis *et al.* (1988). Sheehy Skeffington (2015b) records the species as a component of the arable weed flora of two fields in Co. Clare and considers it probable that the species has a long history of occurrence here, at least in the soil seed-bank.
Centaurea nigra	LC								LC	LC	LC	Stace (2011) considers plants distinguished as subsp. *rivularis* not to merit subspecific status.
Centaurea scabiosa	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Centaurium erythraea	LC						LC (G)		LC	LC	LC	
Centaurium littorale	VU	D2				Yes		V	LC	LC	LC	A rare species in Ireland known only from the Portstewart and Magilligan sand dunes, Co. Derry; it is vulnerable to natural erosional processes, changes in the grazing regime and damage from recreational activities. It is occasionally recorded from coastal siuations outside of Co. Derry, but all such records are unconfirmed.
Centaurium pulchellum	NT	A2c+3c			Yes		LC (G)	V	LC	LC	LC	Decline in Area of Occupancy; future population reduction suspected.
Centunculus minimus	NT	A2c							NT	EN	VU	Formerly known as *Anagallis minima*. Decline in Area of Occupancy.

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Cephalanthera longifolia	VU	D1			Yes		LC (E)	V	VU	EN	EN	Recent surveys sites provide a total population estimate of less than 1000 individuals.
Cerastium arvense	LC						LC (G)		LC	NT	EN	
Cerastium diffusum	LC								LC	LC	LC	
Cerastium fontanum	LC								LC	LC	LC	
Cerastium fontanum subsp. *holosteoides*	WL								LC	LC	LC	Plants of this subspecies characteristically have glabrous or very sparsely pubescent flowering stems and upper leaves, long flowering stems, large leaves, sepals, petals and seeds, and many-flowered inflorescences. It is almost confined to grassy riverbacks and marshy floodplain meadows at or just upstream of those sections of the river under tidal influence, and in Ireland there are confirmed records from the River Bann, Co. Derry and the River Blackwater, Co. Waterford. Sparsely pubescent plants with short stems, smaller parts and few-flowered inflorescences occur frequently on coastal sand dunes and machairs, and are recognised as a distinct variety (of subsp. *vulgare*); similar plants occur sporadically in various habitats throughout the range of subsp. *vulgare*, but these are not afforded separate taxonomic recognition, rather, they are best treated as forming but a part of the wide variation displayed by that subspecies; see Wyse Jackson (1998b) for details. Subsp. *holosteoides* would appear to be much over-recorded in Ireland and a review of the records, research and surveys are required to clarify its distribution, abundance and conservation status.
Cerastium fontanum subsp. *vulgare*	LC								LC	LC		
Cerastium glomeratum	LC								LC	LC	LC	
Cerastium semidecandrum	LC								LC	LC	LC	
Ceratocapnos claviculata	LC								LC	LC	LC	Formerly known as *Corydalis claviculata*.
Ceratophyllum demersum	LC						LC (E,G)		LC	LC	LC	
Ceratophyllum submersum	LC					Yes	LC (E,G)		LC	LC	VU	First recorded in Ireland in 1989 from three lakes in Co. Down (Smith & Wolfe-Murphy 1991; http://www.habitas.org.uk/priority/species.asp?item=2762). It was subsequently noted in Co. Wexford where three sites were recorded between 1987 and 2014. Records from Co. Fermanagh are unconfirmed (Northridge *et al*. 2014). Further surveys to record the up-to-date status of all known populations is desirable.
Chaenorhinum minus	LC								LC	LC	LC	The status of this species is uncertain – Jebb (2014) listed it as archaeophyte or neophyte and Williamson *et al*. (2008) as archaeophyte. Although there have been declines, probably linked to agricultural intensification (Preston *et al*. 2002), the species is still widespread and present in many sites in Ireland, and an assessment of LC is appropriate.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Chaerophyllum temulum	VU	A2c							LC	LC	LC	The status of this species is uncertain – Praeger (1901; 1934a), Preston *et al*. (2002) and Scannell & Synnott (1987) list it as native, Colgan & Scully (1898) as possibly introduced, Webb (1977) as probably introduced, Parnell & Curtis (2012) as certainly introduced and Jebb (2014) as native or alien. Praeger (1901) was emphatic that it was undoubtedly native in many of its stations. The species is declining and under threat and, although of uncertain status, Red List assessment as a precautionary measure rather than inclusion on the Waiting List, following the approach taken by Leach & Walker (2013), is justified.
Chamaemelum nobile	NT	A2c					LC (G)		VU	VU	EN	Decline in Area of Occupancy.
Chamerion angustifolium	LC						LC (G)		LC	LC	LC	A widespread species in Ireland occurring as a rare native on montane cliffs (Colgan & Scully 1898; Parnell & Curtis 2012; Praeger 1901). It spread significantly in the 20th century (Preston *et al*. 2002) and most populations are likely to have originated from introduced stock; the assessment is based on all occurrences of the species. Research to clarify the current status of indigenous populations is desirable.
Chelidonium majus	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Chenopodium album	LC								LC	LC	LC	
Chenopodium bonus-henricus	VU	A2c							VU	VU	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Decline in Area of Occupancy. Sheehy Skeffington (2015b) notes the species as a component of the arable weed flora of two fields in Co. Clare.
Chenopodium rubrum	LC						LC (G)		LC	LC	LC	
Chenopodium vulvaria	RE								EN	EN	RE	Archaeophyte (Jebb 2014); not now or never has been found in Ireland (Williamson *et al*. 2008). There are no records from Ireland for this species since the first half of the 19th century – see Colgan & Scully (1898), Moore & More (1866) and Reynolds (2002). Colgan & Scully (1898) list records from Cos Cork, Waterford and Dublin, and from near Belfast, and note that it was long extinct and formerly cultivated as a medicinal herb. From the scant details of the records it appears unlikely to have been fully naturalised in Ireland but, rather, to be more of a casual in its occurrence.
Chrysosplenium oppositifolium	LC								LC	LC	LC	
Cicendia filiformis	LC								VU	VU	LC	
Cichorium intybus	LC						LC (E)		LC	VU	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Stace (2011) notes that the commonest wild plants are referable to subsp. *silvestre*.
Cicuta virosa	LC						LC (E,G)		LC	LC	LC	
Circaea lutetiana	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Circaea lutetiana x *alpina* = *C.* x *intermedia*	LC											An interspecific hybid of particular interest for the fact that one parent, *C. alpina*, does not now occur in Ireland, having presumably been present in earlier Postglacial times (Stace *et al*. 2015). It has a northern distribution in Ireland, occurring mainly in Ulster where it is widely scattered and locally abundant (Forbes & Northridge 2012) in damp, shady wooded sites, mostly in the uplands and by Lower Lough Erne. It also occurs as a garden weed here and in Cos Dublin and Wicklow.
Cirsium arvense	LC								LC	LC	LC	
Cirsium dissectum	LC			Poss					LC	LC	LC	
Cirsium heterophyllum	CR	B2ab(v); C2a(ii); D				Yes		R	LC	NT	EN	Formerly known as *C. helenioides*. Restricted to Co. Fermanagh, where the number of sites has declined (from two to one) as well as the total number of individuals. Two groups of 16 individuals were recorded in the remaining site in 2005 [four groups were noted in 2009 but individuals were not counted] (Forbes & Northridge 2012).
Cirsium palustre	LC								LC	LC	LC	
Cirsium vulgare	LC								LC	LC	LC	
Cladium mariscus	LC						LC (E,G)		LC	LC	LC	
Clinopodium acinos	NT	A2c			Yes			V	VU	VU	VU	Formerly known as *Acinos arvensis*. There is a lack of agreement regarding the native/alien status of this species. It is considered to be an introduction in Preston *et al*. (2002) and Stace (2011), and probably so in Scannell & Synnott (1987) and Webb (1977). It is listed as native in Jebb (2014) and Parnell & Curtis (2012). It is assessed here following the precautionary approach adopted by Leach & Walker (2013). Decline in Area of Occupancy.
Clinopodium ascendens	LC								LC	LC	LC	
Cochlearia anglica	LC								LC	LC	LC	
Cochlearia danica	LC								LC	LC	LC	A predominantly coastal species, but also found inland along main roads where it has been introduced with salt used for de-icing purposes; see Wyse Jackson (2000) for details.
Cochlearia officinalis	LC								LC	LC	LC	
Cochlearia officinalis subsp. *officinalis*	LC								LC		LC	Assumed to be LC, as species.
Cochlearia officinalis subsp. *scotica*	LC								WL			Considered to be under-recorded.
Cochlearia pyrenaica	LC								LC	LC	DD	Irish plants are referable to subsp. *alpina* (Stace 2011); formerly known as *Cochlearia alpina, C. officinalis* subsp. *alpina*.
Coeloglossum viride	NT	A2c							VU	VU	EN	Some authors place this under *Dactylorhiza*, i.e. *D. viridis*. Decline in Area of Occupancy.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Colchicum autumnale	EN	A2c+3c; B2ab(iii,iv,v)			Yes		LC (G)	EN	NT	LC	LC	The species has been comprehensively surveyed and monitored in recent years – see Smith & Waldren (2010) for details of its genetic variation and conservation status in Ireland. Surveys in 2012 recorded significant declines in the numbers of individuals at most sites and the loss of some sites. Of the seven sites for the species recorded since 1990 it appears that only five remain.
Comarum palustre	LC						LC (G)		LC	NT	LC	Formerly known as *Potentilla palustris*.
Conium maculatum	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Conopodium majus	LC								LC	LC	LC	
Convolvulus arvensis	LC								LC	LC	LC	
Cornus sanguinea	LC								LC	LC	LC	Native range somewhat obscured by introductions. The native plant is subsp. *sanguinea* (Stace 2011).
Corylus avellana	LC						LC (G)		LC	LC	LC	
Crambe maritima	NT	A2c+3c				Yes	LC (E)	NT	LC	LC	LC	Decline in Area of Occupancy; future population reduction suspected.
Crataegus monogyna	LC								LC	LC	LC	Native plants are referable to subsp. *nordica* (Stace 2011).
Crepis biennis	LC								LC	LC	DD	Archaeophyte or neophyte (Jebb 2014). Although of uncertain status in Ireland, this species is widespread and not particularly threatened and an assessment of LC is appropriate.
Crepis capillaris	LC								LC	LC	LC	
Crepis paludosa	LC								LC	LC	LC	
Crithmum maritimum	LC								LC	LC	LC	
Cryptogramma crispa	VU	A2c; B2ab(i,ii,iv)			Yes	Yes		R	LC	VU	LC	Declines in Area of Occupancy, Extent of Occurrence and number of locations.
Cuscuta epithymum	LC					Yes			VU	VU	VU	
Cynoglossum officinale	NT	A2c							NT	NT	LC	Decline in Area of Occupancy.
Cynosurus cristatus	LC								LC	LC	LC	
Cystopteris fragilis	LC								LC	LC	LC	
Cytisus scoparius	LC								LC	LC	LC	
Cytisus scoparius subsp. *maritimus*	VU	D1							LC	VU	LC	The prostrate Broom of sea cliffs. Recent surveys provide a total population estimate of less than 1000 individuals.
Cytisus scoparius subsp. *scoparius*	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Daboecia cantabrica	LC											Traditionally regarded as a native Irish species, the possibility of it having been introduced to Ireland by human activity in the distant past is briefly considered by Sheehy Skeffington & Van Doorslaer (2015). Further investigation of the history and status of this species is merited, building on the work of these authors, Beatty & Provan (2013), Kingston & Waldren (2006), Nelson (2011) and others.
Dactylis glomerata	LC								LC	LC	LC	
Dactylorhiza fuchsii	LC						LC (E)		LC	LC	LC	
Dactylorhiza fuchsii subsp. *fuchsii*	LC								LC	LC		Assumed to be LC, as species.
Dactylorhiza fuchsii subsp. *hebridensis*	WL								WL			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Dactylorhiza fuchsii subsp. *okellyi*	LC			Yes					PL			Placed at different taxonomic ranks (species, subspecies, variety or forma) by various authors; treated as a subspecies in Stace (2011), but with a note that the taxon is doubtfully worth this rank.
Dactylorhiza incarnata	LC						LC (E)		LC	LC	LC	
Dactylorhiza incarnata subsp. *coccinea*	LC			Yes					LC	NT	LC	
Dactylorhiza incarnata subsp. *cruenta*	LC								EN			Treated as a subspecies in Bateman & Denholm (1985) and Stace (2011), as a variety in Curtis & Thompson (2009) and Parnell & Curtis (2012) and a Co. Clare population as no more than a variety or forma in Hedrén *et al*. (2011).
Dactylorhiza incarnata subsp. *gemmana*	WL								DD	DD		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. It is regarded by some authors as a dubious taxon of little taxonomic significance.
Dactylorhiza incarnata subsp. *incarnata*	LC								WL	WL	LC	
Dactylorhiza incarnata subsp. *pulchella*	LC			Yes					WL	WL	LC	
Dactylorhiza kerryensis	LC		Yes	Yes								Irish endemic (Jebb 2009; Stace 2011). Formerly known as *Dactylorhiza majalis* subsp. *occidentalis* (Jebb 2009). Stace (2011) notes that "Molecular data have shown this sp. to be independent from Continental *D. majalis* and from any plants in Br."
Dactylorhiza maculata	LC						LC (E)		LC	LC	LC	Irish plants are referable to subsp. *ericetorum* (Stace 2011).
Dactylorhiza purpurella	LC								LC	LC	LC	
Dactylorhiza traunsteinerioides	LC					Yes	LC (E)	NT	LC	LC	LC	Formerly known as *Dactylorhiza traunsteineri*.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Danthonia decumbens	LC								LC	LC	LC	
Daucus carota	LC						LC (E)		LC	LC	LC	
Daucus carota subsp. *carota*	LC								LC	LC	LC	Assumed to be LC, as species.
Daucus carota subsp. *gummifer*	LC								LC	LC	LC	
Deschampsia cespitosa	LC								LC	LC	LC	
Deschampsia cespitosa subsp. *alpina*	WL								DD			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Deschampsia cespitosa subsp. *cespitosa*	LC								LC	LC	LC	
Deschampsia cespitosa subsp. *parviflora*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Deschampsia flexuosa	LC								LC	LC	LC	
Deschampsia setacea	NT	A3c			Yes			R	LC	VU	VU	Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Descurainia sophia	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Dianthus armeria	EN	D							EN	EN	VU	Discovered on Horse island in Roaringwater Bay, Co. Cork in 1992, where it was considered "apparently native" (Akeroyd & Clarke 1993); subsequent records from the site are in Akeroyd *et al*. (1996; 2011). A specimen held at Kew herbarium and collected from Horse Island in 1950 (Wilson 2007; Noeleen Smyth pers. comm., 22.6.2016) and the presence of a 1952–1954 record on a BSBI mapping scheme record card from Roaringwater Bay, British Grid Extension square 82/80, "Castle Is. Horse Is. Hare Is. Mid and East Calf Islands" [record not included in the published atlas (Perring & Walters 1962)] indicate the presence of the species on Horse Island for over sixty years. Whether native or introduced plants were the basis for these records is not, however, known. The specimen at Kew notes the following: "Pasture, near arable so possibly introduced as a weed." While the species is listed as native in Webb *et al*. (1996) and by Jebb (2014), O'Mahony (2009) considers that the native or naturalised status of the species at the Cork site is "highly problematic and, perhaps, unresolvable", FitzGerald (2012) notes that its status in Ireland "has never become clear" and Parnell & Curtis (2012) regard the species as probably or possibly introduced here. Preston *et al*. (2002) map the Cork site as native, but note that it "is difficult to distinguish native and alien populations in both Britain and Ireland"; Preston & Hill (1997) note the species to be "widely naturalised". In 2012 a second exant Irish site for the species was discovered, on Inis Meáin, Co. Galway (Long 2013) but, as with the Horse Island population, doubts exist regarding the native/naturalised status of the species here. Although of uncertain status in Ireland, this species is under threat, and Red List assessment rather than inclusion on the Waiting List is appropriate; this follows the precautionary approach taken in Great Britain by Leach & Walker (2013) for taxa they term intractable taxa with regard to native/alien status, i.e. taxa for which there will always be doubt about their true status. Recorded from a few places on Horse Island and one on Inis Meáin, the total Irish population numbers less than 250 individuals.
Digitalis purpurea	LC								LC	LC	LC	
Diphasiastrum alpinum	NT	A2c				Yes			LC	LC	LC	Smyth *et al*. (2015) review the status of the species in the Republic of Ireland. See Conaghan (2006), Hodd & Roche (2015), Roche (2011) and Roche & Perrin (2010) for details of some recently-recorded sites. Decline in Area of Occupancy.
Dipsacus fullonum	LC								LC	LC	LC	Native or alien (Jebb 2014). This species is widespread and not declining in Ireland and, although its native/alien status is uncertain, an assessment of LC is appropriate.
Draba incana	LC							R	LC	LC	EN	
Drosera anglica	LC								NT	EN	VU	
Drosera intermedia	LC								LC	VU	VU	
Drosera rotundifolia	LC						LC (G)		LC	NT	LC	
Dryas octopetala	LC					Yes		NT	LC	VU	EN	
Dryopteris aemula	LC			Yes					LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Dryopteris affinis	LC								LC	LC	LC	See Fraser-Jenkins (2007) for details. Trewren (2014) is a useful resource for the identification of the various taxa included in the *D. affinis* aggregate – see Stace (2011).
Dryopteris affinis subsp. *affinis*	LC								LC	LC	LC	
Dryopteris affinis subsp. *kerryensis*	WL		Yes	Yes								Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. It is noted as having being found "only in south-west Ireland" by Byrne *et al*. (2008) and is listed as endemic in Stace (2011) and "apparently endemic to south-western Ireland" in Stace *et al*. (2015).
Dryopteris affinis subsp. *paleaceolobata*	WL								LC	LC		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland, where it is considered to be "apparently rare" (Stace *et al*. 2015).
Dryopteris borreri	LC								LC			See Fraser-Jenkins (2007) for details.
Dryopteris cambrensis	LC								LC	LC	LC	See Fraser-Jenkins (2007) for details.
Dryopteris cambrensis subsp. *cambrensis*	LC								LC	LC		The common subspecies, occurring throughout the range of the species (Stace 2011). Assumed to be LC, as species.
Dryopteris cambrensis subsp. *pseudocomplexa*	WL								LC			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Byrne *et al*. (2008) and Stace (2011) note it from two Irish sites (in Cos Kerry and Waterford).
Dryopteris carthusiana	LC								LC	LC	LC	
Dryopteris dilatata	LC								LC	LC	LC	
Dryopteris filix-mas	LC								LC	LC	LC	
Dryopteris oreades	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this montane species in Ireland.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Dryopteris remota	RE											A fertile derivative of the hybrid between *D. affinis* and *D. expansa*, now treated as a species. The former presence of this species in Ireland is of interest given that *D. expansa* has not, so far, been confirmed from here; however, this is not entirely unusual, with *D. remota* being known from elsewhere in Europe in the absence of either parent (Jermy *et al*. 1978). The species was first found in Ireland in 1898 in a wood at Dalystown, Co. Galway by R.Ll. Praeger who recorded a single clump and who collected material for cultivation (Praeger 1909a; 1909b). In 1935 living material from the Dalystown plant was investigated cytologically and the identification was re-confirmed (Jermy & Camus 1991). The species has never been refound at Dalystown (Preston *et al*. 2002) and is considered to be extinct in Ireland (Stace 2011). Stace (2011) notes, however, that plants from Ireland are still in cultivation. A record from Co. Kerry (see Jermy *et al*. (1978) and Willmot (1983)) is based on an atypical sterile frond and is unconfirmed (Preston *et al*. 2002). Records from Co. Down in Praeger (1951) are rejected by Jermy & Walker (1975) as typographical errors for *D. carthusiana* x *D. dilatata*. Page (2004) provides further details of this interesting taxon.
Echium vulgare	LC								LC	LC	LC	
Elatine hexandra	NT	A2c					LC (E)		LC	LC	LC	Decline in Area of Occupancy.
Elatine hydropiper	LC						LC (E)	R	LC	VU	LC	Although assessed as LC, surveys to monitor the status of populations are merited.
Eleocharis acicularis	LC						LC (E,G)		LC	NT	LC	
Eleocharis multicaulis	LC						LC (E)		LC	LC	LC	
Eleocharis palustris	LC						LC (E,G)		LC	LC	LC	
Eleocharis palustris subsp. *palustris*	WL								DD	DD	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Eleocharis palustris subsp. *vulgaris*	LC								LC	LC		Assumed to be LC, as species.
Eleocharis parvula	CR	B2ab(i,ii,iv)				Yes	DD (E)	V	LC	EN	VU	This species has been recorded from only three sites in Ireland, but has been lost from two (Arklow, Co. Wicklow, last recorded in 1925, and the Cashen River, Co. Kerry, last recorded in 1952/53). The loss of the Co. Kerry site is attributed to dredging/arterial drainage works undertaken in the early 1950s. The sole remaining Irish site is the estuary of the River Bann (see Hackney (1992) and http://www.habitas.org.uk/priority/species.asp?item=2393).
Eleocharis quinqueflora	LC						LC (E,G)		LC	LC	LC	
Eleocharis uniglumis	LC						LC (E,G)		LC	LC	LC	
Eleogiton fluitans	LC						LC (E,G)		LC	LC	LC	Formerly known as *Scirpus fluitans*, *Isolepis fluitans*.
Elymus caninus	LC						LC (E)		LC	LC	LC	Formerly known as *Agropyron caninum*. Irish plants are referable to subsp. *caninus* (Sell & Murrell 1996).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Elytrigia atherica	LC								LC	LC	LC	Formerly known as *Elymus pycnanthus, Agropyron pycnanthum*, *A. pungens*.
Elytrigia campestris	WL								LC	DD	DD	Formerly known as *Elytrigia repens* subsp. *arenosa*, *Elymus repens* subsp. *arenosus*. Its occurrence in Ireland is noted in Stace (2011). Irish plants are referable to subsp. *maritima* (Stace 2011). Trist (1995) provides details of the taxon and maps its European range. Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Elytrigia juncea	LC								LC	LC	LC	Formerly known as *Elymus farctus, Agropyron junceiforme*. Irish plants are referable to subsp. *boreoatlantica* (Stace 2011).
Elytrigia repens	LC								LC	LC	LC	Formerly known as *Elymus repens, Agropyron repens*.
Empetrum nigrum	LC								LC	LC	LC	Irish plants are referable to subsp. *nigrum* (Stace 2011).
Epilobium alsinifolium	EN	D			Yes			R	LC	LC	LC	Known only from one site in Co. Leitrim, at which a 2012 survey recorded a total of 96 plants.
Epilobium hirsutum	LC						LC (G)		LC	LC	LC	
Epilobium montanum	LC								LC	LC	LC	
Epilobium obscurum	LC								LC	LC	LC	
Epilobium palustre	LC						LC (G)		LC	LC	LC	
Epilobium parviflorum	LC						LC (G)		LC	LC	LC	
Epilobium roseum	LC								LC	LC	LC	Native or alien (Jebb 2014). This species has a scattered distribution in Ireland and there are few recorded losses. Despite its uncertain status an assessment of LC is appropriate.
Epipactis atrorubens	LC						LC (E)		LC	LC	EN	
Epipactis helleborine	LC						LC (E)		LC	LC	LC	
Epipactis leptochila	WL						LC (E,G)		DD	DD	CR	See Beesley (2006), Curtis & Thompson (2009), Hackney (1992) and Parnell & Curtis (2012) for details of a record from Co. Antrim for which "further confirmation is desirable". Research and surveys are required to clarify the occurrence, distribution, abundance and conservation status of this species in Ireland.
Epipactis palustris	LC					Yes	LC (E,G)	NT	LC	NT	LC	
Epipactis phyllanthes	EN	D				Yes	LC (E,G)	V	LC	LC	VU	See Brunker (1954), Sipkes (1954) and Webb (1953b) for the discovery, and Curtis & Wilson (2011) for the re-discovery, of the species at sites in Co. Wicklow; Beesley (2006), Curtis & Thompson (2009), Doogue *et al*. (1998), Forbes & Northridge (2012), Hackney (1992) and Northridge *et al*. (2014) provide details of other Irish sites. The latest counts from known Irish sites indicate a population of between 100 and 200 individuals. Some plants of the highly variable *E. helleborine* may resemble this species morphologically.
Equisetum arvense	LC						LC (E,G)		LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Equisetum fluviatile	LC						LC (E,G)		LC	LC	LC	
Equisetum hyemale	LC						LC (G)		LC	LC	LC	
Equisetum hyemale x *E. ramosissimum* = *E.* x *moorei*	NT	A3c			Yes							An interspecific hybrid of particular interest for the fact that one of its parents, *E. ramosissimum*, has not been recorded from Ireland. It occurs in sand dunes on the Co. Wexford and Wicklow coasts, where recent surveys have recorded tens of thousands of plants. Its populations are susceptible to loss and damage from a variety of impacts, including recreational activities, developments, changes in land management and coastal erosion; it has never been refound at one of its recorded sites. Future population reduction suspected; the future prospects for its main habitat (fixed dunes) are assessed as unfavourable (NPWS 2013a; 2013b) and an assessment of NT is appropriate.
Equisetum palustre	LC						LC (E,G)		LC	LC	LC	
Equisetum pratense	LC							R	LC	NT		
Equisetum sylvaticum	LC								LC	LC	LC	
Equisetum telmateia	LC						LC (G)		LC	LC	LC	
Equisetum variegatum	LC								LC	LC	LC	See Hackney (1981) for floristic data on four sites for the species in Cos Derry, Down and Fermanagh.
Erica ciliaris	WL							V	LC	LC		Webb (1966) describes the history and re-discovery of the species in Connemara, Co. Galway; while he was of the opinion that the species is native here (see, for example, Webb *et al*. (1996) and Webb & Scannell (1983)) other authors have treated the species as an introduction (Curtis 2000; Jebb 2014; Parnell & Curtis 2012; Stace 2011). Given its single location and lack of spread (despite an abundance of apparently suitable habitat nearby), the case for the species being a long-established (archaeophyte) introduction is weaker than for *Erica erigena* and *Erica mackayana* and, if indeed introduced rather than native, it is more likely to be a recent (neophyte) introduction through human activity (whether deliberately planted or not). Curtis (2000) argues that doubt exists as to whether or not the species was deliberately planted in Connemara, and certainly deliberate planting would seem to be a strong possibility. Although likely to be neophyte, the species is placed on the Waiting List pending further research, including genetic analysis, which may help to resolve the status of this species in Ireland once and for all. See Nelson (2011) for further details.
Erica cinerea	LC						LC (G)		LC	NT	LC	See Nelson (2011) for details.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Erica erigena	LC											Listed as native by Jebb (2014) and mapped as such in Preston *et al*. (2002) who, however, note its possible introduction to Ireland in the 15th century, a suggestion originating from research on the species by Foss & Doyle (1988a; 1988b; 1990). Parnell & Curtis (2012) indicate that the species was probably or possibly introduced and note that "Current evidence strongly suggests that this is an introduced species but very long established"; Sheehy Skeffington (2015a) summarises the case for its likely introduction. While the species might be native in Ireland, the case for it being an archaeophyte introduction is undeniably strong. Its distribution and abundance at known Irish sites is mapped and described by Foss *et al*. (1987), who consider that its conservation status in western Ireland would seem to be secure as, indeed, it does at the present time. Parnell & Curtis (2012) note the species to be spreading. See Nelson (2011) for further details.
Erica mackayana	LC							R				Formerly known as *Erica mackaiana*. Listed as native in Jebb (2014) and probably or possibly introduced in Parnell & Curtis (2012). A strong case for considering the species to be an archaeophyte introduction in Ireland is put forward by Sheehy Skeffington & Van Doorslaer (2015), who consider that the species may have arrived in the Roundstone area, Co. Galway in Mediaeval times or earlier; they also posit that smuggling in more recent times provides a plausible explanation for its advent at its other Irish sites. Its distribution and abundance at Irish sites is mapped and described by Nelson (1981; 2005), Sheehy Skeffington & Sheppard (2015), Sheehy Skeffington & Van Doorslaer (2015), Van Doorslaer (1990) and Webb (1954a; 1955). For the purposes of this Red List records from all the Irish sites have been included in the analyses. See Nelson (2011) for further details.
Erica tetralix	LC								LC	NT	LC	See Nelson (2011) for details.
Erica vagans	CR	B2ab(v)				Yes		V	NT	NT	NA	Although recorded as a garden escape in several sites, mainly near the coast, the species occurs at a single site in Co. Fermanagh where it is considered to be possibly native by Scannell & Synnott (1987) and archaeophyte by Jebb (2014). Webb (1954b) discusses this site and concludes that, on balance, the species is likely to be native there; that he considers it not to be a certain native is evidenced by its listing as possibly introduced in five editions of *An Irish Flora* (Webb 1953a; 1959; 1963; 1967; 1977). Webb *et al*. (1996) note it to be probably native at the Co. Fermanagh site. Here the colony, which Curtis & McGough (1988) describe as numbering approximately 500 plants, "has definitely contracted, perhaps by 75% in the last 50 years" (Forbes & Northridge 2012); see Nelson (2011), Nelson & Coker (1974) and Northridge *et al*. (2014) for further details.
Erigeron acris	LC					Yes		V	LC	LC	LC	Formerly known as *Erigeron acer*. Irish plants are referable to subsp. *acris* (Sell & Murrell (2006), as subsp. *acer*).
Eriocaulon aquaticum	NT	A2c		Yes			LC (E,G)		LC			Decline in Area of Occupancy.
Eriophorum angustifolium	LC						LC (E,G)		LC	VU	LC	

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Eriophorum gracile	NT	A3c			Yes		NT (E)	R	NT	VU	VU	See Rose (1967) and Scannell *et al*. (1968) for details of the discovery of this species in Ireland. Its Irish distribution and conservation status is detailed in Conaghan & Sheehy Skeffington (2009). Future population reduction suspected; the future prospects for its main habitats are assessed as unfavourable (NPWS 2013a; 2013b).
Eriophorum latifolium	LC						LC (G)		LC	LC	LC	
Eriophorum vaginatum	LC						LC (G)		LC	LC	LC	
Erodium cicutarium	LC								LC	LC	LC	Sell & Murrell (2009) distinguish two subspecies, subsp. *cicutarium* and subsp. *dunensis* – the distribution of these in Ireland is mapped and described in Perring & Sell (1968). However, these are not recognised by Stace (2011), who notes the common occurrence of intermediates.
Erodium lebelii	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. Considered likely to be under-recorded, as suggested in Perring & Sell (1968).
Erodium maritimum	LC								LC	LC	LC	
Erophila glabrescens	LC								LC	LC	LC	
Erophila majuscula	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. Although likely to be under-recorded it would also appear to be genuinely rare.
Erophila verna	LC								LC	LC	LC	
Eryngium maritimum	LC								LC	NT	LC	
Erysimum cheiri	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Euonymus europaeus	LC								LC	LC	LC	
Eupatorium cannabinum	LC								LC	LC	LC	Irish plants are referable to subsp. *cannabinum* (Sell & Murrell 2006).
Euphorbia exigua	NT	A2c							NT	VU	NT	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Decline in Area of Occupancy.
Euphorbia helioscopia	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Euphorbia hyberna	LC								VU	VU		A predominantly south-western species in Ireland; it occurs as an introduction in Cos Antrim, Down and Monaghan.
Euphorbia paralias	LC								LC	LC	LC	
Euphorbia peplis	RE							EX	EX	EX	EX	Not recorded in Ireland since 1839, when it was found by Helena Trench at Garrarus Cove, near Tramore, Co. Waterford. Much sought for since – 1870, 1871, 1882 (Colgan & Scully 1898), 1902 (Lett 1913) and regularly thereafter. Lett (1913) suggests that "the disappearance of the plant may be accounted for by the removal every year of large quantities of the beautiful gravel forming the beach and headlands at the spot."

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Euphorbia peplus	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Euphorbia portlandica	LC								LC	LC	LC	
Euphrasia arctica	LC			Poss					DD	VU	NT	Irish plants are referable to subsp. *borealis* (Stace 2011). Records for subsp. *arctica* require confirmation.
Euphrasia confusa	LC								DD	VU	VU	
Euphrasia frigida	WL								DD	LC		Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Euphrasia micrantha	WL								DD	EN	VU	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Euphrasia nemorosa	LC								LC	NT	LC	
Euphrasia officinalis	WL											Represented in Ireland by subsp. *anglica*, subsp. *monticola* and subsp. *pratensis* (Stace 2011). See Silverside (1991) for discussion of the infraspecific taxonomy and nomenclature of the species. Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Euphrasia officinalis subsp. *anglica*	WL								EN	EN	VU	Formerly known as *Euphrasia anglica*. Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Euphrasia officinalis subsp. *monticola*	WL								VU	DD	VU	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. It has been reported from two hectads in Ireland (Stace *et al*. 2015), both in Co. Kerry.
Euphrasia officinalis subsp. *pratensis*	WL								VU	VU	LC	Formerly known as *Euphrasia rostkoviana*. Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Euphrasia pseudokerneri	WL								EN	VU	VU	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Euphrasia salisburgensis	LC											Irish plants are referable to the endemic var. *hibernica*, which Stace (2011) considers may be best placed at the subspecific rank; Sell & Murrell (2009) treat it as a separate species, *E. hibernica*.
Euphrasia scottica	LC								LC	LC	LC	
Euphrasia tetraquetra	LC			Poss					LC	NT	LC	
Fallopia convolvulus	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Festuca altissima	LC								LC	LC	LC	

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Festuca arenaria	WL								LC	LC	LC	Formerly known as *Festuca rubra* subsp. *arenaria*. Irish plants are referable to subsp. *arenaria* (Stace 2011). Jebb (2014) lists the occurrence of this species in Ireland as "error? = Probable errors". Research and surveys are required to clarify the occurrence, distribution, abundance and conservation status of this species in Ireland.
Festuca filiformis	LC								LC	LC	LC	Formerly known as *Festuca tenuifolia*.
Festuca ovina	LC						LC (E)		LC	LC	LC	
Festuca ovina subsp. *hirtula*	WL								WL			There are only a handful of records for this subspecies from Ireland and its status here requires further review. It is listed from three Irish vice-counties by Wilkinson & Stace (1991). It is considered to be common through Great Britain and Ireland (Stace 2011).
Festuca ovina subsp. *ophioliticola*	WL								WL		LC	Although considered locally common through Great Britain and Ireland (Stace 2011) there are few records of this subspecies from Ireland and its status requires further review. The occurrence in several Irish vice-counties of the subspecies and of its two recognised varieties, var. *ophioliticola* (Kerguélen) M.J. Wilk. and var. *hibernica* (Markgr.-Dann.) M.J. Wilk., is noted by Wilkinson & Stace (1991). Dines (2008) notes it to be under-recorded in Wales, but dominant in the uplands.
Festuca ovina subsp. *ovina*	WL								WL			Wilkinson & Stace (1991) note that this has been recorded from "northern and southern Ireland", but do not list any Irish vice-counties for it, and its occurrence is questioned by Stace (2011) and by Sell & Murrell (1996). A review of the many mapped records for the taxon and of other sources is required to establish its status in Ireland.
Festuca rubra	LC						LC (E)		LC	LC	LC	
Festuca rubra subsp. *juncea*	LC								LC	LC	LC	
Festuca rubra subsp. *litoralis*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Festuca rubra subsp. *rubra*	LC								LC	LC	LC	Assumed to be LC, as species.
Festuca vivipara	LC								LC	LC	LC	
Ficaria verna	LC								LC	LC	LC	Formerly known as *Ranunculus ficaria*.
Ficaria verna subsp. *fertilis*	LC								LC	LC	LC	Formerly known as *Ranunculus ficaria* subsp. *ficaria*.
Ficaria verna subsp. *verna*	LC								LC	LC	LC	Formerly known as *Ranunculus ficaria* subsp. *bulbilifer/bulbifer*. This is listed as probably introduced in Scannell & Synnott (1987) and Reynolds (2002), and Jebb (2014) lists as neophyte. However, many authors consider it to be native, e.g. Forbes & Northridge (2012), Green (2008a), Parnell & Curtis (2012), Preston *et al*. (2002), Reynolds (2013), Stace (2011), Webb (1977), Webb *et al*. (1996). It is widespread and not declining in Ireland and, although its status is uncertain, an assessment of LC is appropriate.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Filago minima	NT	A2c			Yes			R	LC	NT	LC	Formerly known as *Logfia minima*. Decline in Area of Occupancy.
Filago vulgaris	VU	A2c							NT	NT	VU	Decline in Area of Occupancy.
Filipendula ulmaria	LC						LC (G)		LC	LC	LC	
Filipendula vulgaris	LC							R	LC	LC	LC	Population >1000 individuals, not significantly declining.
Foeniculum vulgare	LC								LC	LC	LC	Archaeophyte or neophyte (Jebb 2014); neophyte (Williamson *et al*. 2008). This species occurs widely in Ireland, mostly within 50 km of the coast and, despite its uncertain status, an assessment of LC is appropriate.
Fragaria vesca	LC						LC (E)		LC	NT	LC	
Frangula alnus	LC					Yes		R	LC	LC	LC	
Fraxinus excelsior	LC								LC	LC	LC	It is, as yet, unclear to what extent spread of the "Ash dieback" fungus (*Hymenoscyphus fraxineus*, formerly known as *H. pseudoalbidus* [sexual stage] and *Chalara fraxinea* [asexual stage]) will affect the frequency and distribution of the species.
Fumaria bastardii	LC								LC	LC	LC	Archaeophyte or neophyte (Jebb 2014). This species is widespread in Ireland and while there have undoubtedly been losses due to agricultural intensification, it is considered that many of the apparent losses are attributable to under-recording (as suggested in Preston *et al*. (2002)) and that, despite its uncertain status, an assessment of LC is appropriate.
Fumaria capreolata	LC								LC	LC	LC	Irish plants are referable to subsp. *babingtonii* (Stace 2011). Native or alien (Jebb 2014). This species is widespread in Ireland and appears to be declining; however, it is considered that many of the apparent losses are attributable to under-recording and that, despite its uncertain status, an assessment of LC is appropriate.
Fumaria densiflora	RE								LC	LC	RE	Archaeophyte or neophyte (Jebb 2014); not now or never has been found in Ireland (Williamson *et al*. 2008). A rare species of casual occurrence recorded only once in Ireland since 1970. Day & Hackney (2004) note the species at a site in Co. Down in 2001, but also that when the site was re-visited in 2002 it was no longer present; they express the view that it "may re-occur, as it is probably still present on the Ards Peninsula" [incidentally, since this time the species has not been recorded on the peninsula despite regular recording (Graham Day pers. comm., 1.3.2016)]. The 2001 record was of a single plant growing on dumped gravelly soil. The plant was not refound again when the site was revisited a week after being found (the soil had been levelled for what would become a car park) or during the 2002 survey or on regular visits thereafter (Graham Day pers. comm., 1.3.2016). Since there has been only one confirmed record from Ireland since 1970 and the site at which it was found has been searched specifically for the species since, it must be considered to be RE. Faulkner (2015) notes that this species was "Always very rare in Ireland and now possibly extinct throughout". The Co. Down record is not noted in Murphy (2009).

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Fumaria muralis	LC								LC	LC	LC	Archaeophyte (Jebb 2014). Irish plants are referable to subsp. *boroei* (Stace 2011).
Fumaria officinalis	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Fumaria officinalis subsp. *officinalis*	LC								LC	LC	LC	*F. officinalis* is archaeophyte (Jebb 2014; Williamson *et al.* 2008). Assumed to be LC, as species.
Fumaria officinalis subsp. *wirtgenii*	LC								LC	LC	LC	*F. officinalis* is archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Fumaria purpurea	LC								LC	VU	CR	Native or alien (Jebb 2014). While there have undoubtedly been losses due to agricultural intensification, it is considered that many of the apparent losses are attributable to under-recording (as suggested in Preston *et al.* (2002)) and that, despite its uncertain status, an assessment of LC is appropriate.
Galeopsis angustifolia	VU	A2c			Yes			V	CR	CR	CR	British archaeophyte that could be native in Ireland (Jebb 2014); archaeophyte (Williamson *et al.* 2008). Decline in Area of Occupancy.
Galeopsis bifida	LC								LC	LC	LC	
Galeopsis speciosa	NT	A2c+3c							VU	VU	VU	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Area of Occupancy; future population reduction suspected.
Galeopsis tetrahit	LC								LC	LC	LC	Archaeophyte (Jebb 2014). Although this species has shown declines it is still widespread in Ireland, present in a large number of sites, often in abundance, and would also appear to be somewhat under-recorded. An assessment of LC is appropriate.
Galium aparine	LC								LC	LC	LC	Sell & Murrell (2006) recognise two subspecies, subsp. *aparine* and subsp. *agreste* P.D. Sell; investigation is required to determine the occurrence and distribution of these in Ireland.
Galium boreale	LC								LC	LC	LC	
Galium odoratum	LC								LC	LC	LC	
Galium palustre	LC						LC (G)		LC	LC	LC	
Galium palustre subsp. *elongatum*	LC								LC		LC	
Galium palustre subsp. *palustre*	LC								LC		LC	
Galium saxatile	LC								LC	LC	LC	
Galium sterneri	LC								LC	LC	LC	
Galium uliginosum	LC						LC (G)		LC	LC	LC	

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Galium verum	LC								LC	LC	LC	Sell & Murrell (2006) recognise two subspecies, subsp. *verum* and subsp. *maritimum* (which is treated as a variety in Stace (2011)); investigation is required to determine the occurrence and distribution of these in Ireland.
Gentiana verna	NT	A3c							VU	VU		Irish plants are referable to subsp. *verna* (Sell & Murrell 2009). Future population reduction suspected; the future prospects for its main habitats are assessed as unfavourable (NPWS 2013a; 2013b).
Gentianella amarella	NT	A2c	Yes[1]	Yes[2]		Yes			LC	NT	LC	[1]Irish plants are referable to the endemic subsp. *hibernica* (Prichard 1959; Stace 2005). [2]Subsp. *hibernica* only. Decline in Area of Occupancy.
Gentianella campestris	NT	A2c+3c							VU	EN	EN	The decline of the species in Ireland mirrors that experienced in Great Britain and over much of its continental European range – see Forbes & Northridge (2012), Smith & Lockwood (2011) and Walker (2015) for details. Decline in Area of Occupancy. Future population reduction suspected; the future prospects for its main habitats are assessed as unfavourable (NPWS 2013a; 2013b).
Geranium columbinum	LC								LC	LC	LC	
Geranium dissectum	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Geranium lucidum	LC								LC	LC	LC	
Geranium molle	LC								LC	LC	LC	
Geranium pratense	VU	D2				Yes			LC	LC	LC	Native, with small original range, now widespread (Jebb 2014). While widespread in Ireland as a garden escape, the native range of the species is now restricted to a small area of the north Co. Antrim coast.
Geranium purpureum	NT	A2c+3c						V	LC	LC	RE	Irish plants are referable to subsp. *purpureum* (Sell & Murrell 2009). See Akeroyd *et al*. (1996), Green (2008a), O'Mahony (1985) and his annual reports on the Cork flora in *Irish Botanical News* (http://bsbi.org/ireland) for details of sites. Decline in Area of Occupancy; future population reduction suspected.
Geranium pusillum	LC								LC	LC	LC	Native or alien (Jebb 2014). Found mainly within 30 km of the east, south and south-west coasts, but with a few scattered inland records also. The species is not rare nor are there significant losses, and it likely to be under-recorded. Despite its uncertain status an assessment of LC is appropriate.
Geranium robertianum	LC								LC	LC	LC	
Geranium robertianum subsp. *celticum*	WL			Yes					WL		WL	Research and surveys are required to clarify the taxonomic status, distribution, abundance and conservation status of this subspecies in Ireland. Webb & Scannell (1983) describe it as a rather striking variant and Sell & Murrell (2009) consider it as "apparently endemic" to Great Britain and Ireland. Its taxonomic validity is questioned by Stace (2011) who suggests that it may not be a meaningful taxon.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Geranium robertianum subsp. *maritimum*	WL								WL			Research and surveys are required to clarify the taxonomic status, distribution, abundance and conservation status of this subspecies in Ireland. Its taxonomic validity is questioned by Stace (2011) who suggests that it may not be a meaningful taxon.
Geranium robertianum subsp. *robertianum*	LC											Assumed to be LC, as species.
Geranium rotundifolium	LC							V	LC	LC	LC	Assessment based on native occurrences.
Geranium sanguineum	LC								LC	NT	LC	
Geranium sylvaticum	EN	B2ab(i,ii,iv)				Yes		V	LC	NT	CR	As a native the species is confined to a small area of the east Co. Antrim coast, where it is known from less than five sites in two hectads. It has not been refound in a third hectad. Elsewhere it is an occasional garden escape. The assessment is based on its native occurrences.
Geum rivale	LC						LC (G)		LC	LC	LC	Irish plants are referable to subsp. *rivale* (Sell & Murrell 2014).
Geum urbanum	LC								LC	LC	LC	
Glaucium flavum	NT	A2c							LC	NT	LC	Decline in Area of Occupancy.
Glaux maritima	LC								LC	LC	LC	
Glebionis segetum	NT	A2c+3c							VU	VU	LC	Formerly known as *Chrysanthemum segetum*. Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Decline in Area of Occupancy; future population reduction suspected.
Glechoma hederacea	LC								LC	LC	LC	
Glyceria declinata	LC						LC (E)		LC	LC	LC	
Glyceria fluitans	LC						LC (E,G)		LC	LC	LC	
Glyceria maxima	LC						LC (E,G)		LC	LC	LC	
Glyceria notata	LC						LC (E,G)		LC	LC	LC	Formerly known as *Glyceria plicata*.
Gnaphalium sylvaticum	EN	A2c			Yes			R	EN	EN	CR	Formerly known as *Omalotheca sylvatica*. This species has experienced significant declines both before and after 1930. The majority of sites are in Ulster.
Gnaphalium uliginosum	LC								LC	LC	LC	Irish plants are referable to subsp. *uliginosum* (Sell & Murrell 2006).
Groenlandia densa	NT	A2c			Yes		LC (E,G)	V	VU	VU	VU	Decline in Area of Occupancy.
Gymnadenia borealis	LC						DD (E,G)		LC	DD	DD	Formerly known as *Gymnadenia conopsea* subsp. *borealis*.
Gymnadenia conopsea	LC						LC (E)		LC	LC	LC	Formerly known as *Gymnadenia conopsea* subsp. *conopsea*.
Gymnadenia densiflora	LC								DD	DD	DD	Formerly known as *Gymnadenia conopsea* subsp. *densiflora*.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Gymnocarpium dryopteris	RE					Yes		V	LC	NT	LC	Not recorded in Ireland between 1970 and 2014, other than from two sites in Co. Antrim, at one of which the record requires confirmation and at the other the species is considered to be extinct (Beesley 2006). Synnott (1992b) provides a useful examination and discussion of Irish records. See Beesley (2006), Brunker (1950), Curtis & McGough (1988), Day & Hackney (2004), Hackney (1992) and Stelfox (1949) for further details.
Gymnocarpium robertianum	CR	B2ab(iii); C2a(ii)			Yes				LC	LC	VU	Known as a native from one site, in Co. Mayo; part of the site was lost to quarrying activities in the recent past and, as a safeguard, some plants were translocated in 1996 and 2003 to a site near Mullach Mór in the Burren, Co. Clare, where the species still occurs (2013).
Hammarbya paludosa	NT	A2c+3c			Yes	Yes	LC (E)	R	LC	VU	EN	Formerly known as *Malaxis paludosa*. Decline in Area of Occupancy; future population reduction suspected. The future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Hedera helix	LC								LC	LC	LC	Irish plants are referable to subsp. *helix*.
Hedera hibernica	LC								LC	LC	LC	Formerly known as *Hedera helix* subsp. *hibernica*.
Helianthemum nummularium	CR	A2a+3c; B2ab(v); C2a(i,ii); D			Yes			R	LC	NT	LC	Known from a single calcareous grassland/limestone pavement site in Co. Donegal – see Curtis *et al*. (1985b) and Praeger (1934b). Significantly declining and threatened by undergrazing/scrub encroachment. A 2013 survey recorded a total population of eight individuals (patches) in an area of a few square metres.
Helianthemum oelandicum	NT	A2c		Poss[1]				R	LC	LC	LC	Formerly known as *Helianthemum canum*. [1]Irish plants are referable to subsp. *piloselloides* (Stace 2011) of which Ireland may hold more than 25% of the European population; however, research on the taxonomic relationship of Irish and Pyrenean populations referred to this subspecies is required. Records for subsp. *incanum* require confirmation. Decline in Area of Occupancy.
Helminthotheca echioides	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Formerly known as *Picris echioides*.
Heracleum sphondylium	LC								LC	LC	LC	Irish plants are referable to subsp. *sphondylium* (Stace 2011).
Hieracium agg.	LC										LC	The assessment of this species aggregate includes all Irish *Hieracium* species.
Hieracium argentatum	VU	D1	Yes	Yes								*Hieracium argentatum* (Pugsley) P.D. Sell. Irish endemic (Rich *et al*. 2008b; Sell & Murrell 2006). Surveys in 2006 and 2008 recorded a population of at least 870 individuals (Rich *et al*. 2008b).
Hieracium basalticola	LC		Yes	Yes								*Hieracium basalticola* Pugsley. Irish endemic (Rich *et al.* 2010b; Stace 2005). Surveys in 2006, 2007 and 2008 recorded a population of over 3950 individuals (Rich *et al*. 2010b).
Hieracium hartii	CR	D	Yes	Yes								*Hieracium hartii* (F. Hanb.) P.D. Sell & C. West. Irish endemic (Rich *et al*. 2010a; Stace 2005). Restricted to one site in Co. Donegal. A survey in 2006 recorded *c*. 21 individuals and in 2008 "the population was estimated as about 50 individuals" (Rich *et al*. 2010a).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Hieracium hibernicum	CR	B2ab(i,ii,iv); D	Yes	Yes								*Hieracium hibernicum* F. Hanb. Irish endemic (Rich *et al*. 2010a; Stace 2005). Currently known from one site in Co. Donegal; lost from another Co. Donegal site and from one in the Mourne Mountains, Co. Down. Surveys in 2006 and 2008 recorded a total of 41 individuals (Rich *et al*. 2010a) in the remaining site.
Hieracium scullyi	EN	B2ab(v); D	Yes	Yes								*Hieracium scullyi* E.F. Linton. Irish endemic (Rich *et al*. 2008b; Stace 2005). Restricted to Co. Kerry. Surveys in 2006, 2007 and 2008 recorded a total population of 210 individuals (Rich *et al*. 2008b); bridge repairs at one site in 2010 resulted in the loss of 32 individuals, significantly reducing the population of this species by 15% to 178 individuals.
Hieracium sparsifrons	EN	D	Yes	Yes								*Hieracium sparsifrons* P.D. Sell & C. West. Irish endemic (Rich *et al*. 2008b; Stace 2005). Restricted to Co. Kerry. Surveys in 2006 recorded a total population of 204 individuals (Rich *et al*. 2008b).
Hierochloe odorata	RE					Yes		R	LC	VU		Although recorded on several occasions since 1970 – see Beesley (2006), Hackney (1992) and Harron (1986), extensive searches for the species in 2005 failed to locate it, prompting Beesley (2006) to remark that "It is feared that it may now be extinct". The last record appears to have been in 1992 (Beesley 2006).
Hippuris vulgaris	LC						LC (E,G)		LC	LC	NT	
Holcus lanatus	LC								LC	LC	LC	
Holcus mollis	LC								LC	LC	LC	
Honckenya peploides	LC								LC	LC	LC	
Hordelymus europaeus	CR	D						IN	LC	LC	VU	Listed as neophyte in Jebb (2014), but native in Beesley (2006) and Hackney (1992). Thought to be extinct in Ireland, but refound at the *locus classicus* in 2011 – a single fruiting plant of the species, along with four to five non-flowering tufts considered likely to be the species (Jannink 2012). When previously recorded (Stelfox 1949), only a single flowering tuft was seen. The species seems to have always been rare at the site, with a total of only five to six tufts noted when the species was originally discovered here in 1898 (Stelfox 1949).
Hordeum murinum	LC						LC (E)		LC	LC	LC	Irish plants are referable to subsp. *murinum* (Stace 2011). Archaeophyte or neophyte (Jebb 2014); archaeophyte (Williamson et al. 2008). The species is neither rare nor declining and, despite its uncertain status, an assessment of LC is appropriate.
Hordeum secalinum	VU	A2c			Yes		LC (E)	V	LC	LC	LC	Recent losses at sites in Cos Clare, Dublin, Kilkenny, Limerick, Offaly, Waterford. Decline in Area of Occupancy.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Hottonia palustris	CR	B2ab(i,ii,iii,iv)					LC (E,G)	R	LC	VU	NT	Listed as neophyte in Jebb (2014). Although the majority of Irish populations are certainly neophyte introductions – see Minchin & Boelens (2005) and Reynolds (2002) for notes and Irish distribution, it is considered to be native or possibly so at a site in Co. Down (http://www.habitas.org.uk/priority/species.asp?item=3932; http://www.habitas.org.uk/flora/species.asp?item=3932; Day & Hackney 2004; Forbes & Northridge 2012; Preston *et al*. 2002). Following the precautionary approach adopted by Leach & Walker (2013) for taxa of uncertain status, an assessment of the species is made here, based on the Co. Down population. The species has been lost from most of its recorded sites in Co. Down – the last records from the various sites for the species, as given in Day & Hackney (2004), were Annacloy Bridge [in 1937], Crossgar [1927], Downpatrick Marshes [1980 – one plant according to Hackney (1992)], Inch Abbey [1950], Quoile [1971–1987] and Hollymount NNR [2004 – since recorded here in 2011 (Day 2012)].
Huperzia selago	LC								LC	LC	LC	Irish plants are referable to subsp. *selago* (Stace 2011). A record of subsp. *arctica* from Co. Clare requires confirmation. Smyth *et al*. (2015) review the status of the species in the Republic of Ireland.
Hyacinthoides non-scripta	LC					Yes[1]			LC	LC	LC	Formerly known as *Endymion non-scriptus*. [1]Listed on Part 2 of Schedule 8 of the Wildlife (Northern Ireland) Order 1985, as amended.
Hydrilla verticillata	EN	B2ab(iii)			Yes		DD (E) LC (G)	V	VU	RE		Known from two sites in Ireland, both in Co. Galway – see Caffrey & Rorslett (1989), Pearsall (1936), Roden (2005) and Scannell & Webb (1976). The quality of the habitat at Rusheenduff Lough has declined and the future of the species here is uncertain.
Hydrocharis morsus-ranae	LC						LC (E,G)		VU	VU	NT	
Hydrocotyle vulgaris	LC						LC (E,G)		LC	NT	LC	
Hymenophyllum tunbrigense	LC			Yes					LC	LC	LC	
Hymenophyllum wilsonii	LC			Prob					NT	LC	LC	
Hyoscyamus niger	NT	A2c				Yes		R	VU	VU	LC	British archaeophyte that could be native in Ireland (Jebb 2014); archaeophyte (Williamson *et al*. 2008). Decline in Area of Occupancy.
Hypericum androsaemum	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Hypericum canadense	LC			Yes	Yes			R				There are various and differing opinions regarding the status of this species in Ireland. In the original papers reporting its discovery and documenting its distribution, habitat and status (Webb 1957a; 1958a; Webb & Halliday 1973) it is considered to be a native member of the Irish flora and is listed as such in Webb (1959; 1963; 1967; 1977). This view is followed in Scannell & Synnott (1987) [although listed as possibly introduced in Co. Cork] and by Jebb (2014), and the species is not included as an alien in Reynolds (2002). On the other hand, it is listed as probably/possibly introduced in Webb *et al*. (1996), probably introduced/naturalised in Stace (2011) and certainly introduced in Parnell & Curtis (2012). In Preston *et al*. (2002) it is considered by Norman Robson to be a neophyte and mapped as alien. Prior to this, in his account of the genus in Europe (Robson 1968), he had expressed his doubts regarding the status of the species, its occurrence in Ireland being indicated as "doubtful; possibly native". He subsequently elaborated his view on its status (Robson 1990a), in which he lists the species as "introduced" but at the same time considered that "Introduction by human agency seems unlikely (except perhaps at Glengarriff), but long-distance transport (ancient or recent) by waterfowl remains a distinct possibility". In Robson (1990b) he reiterated and clarified his stance: "My own view is that *H. canadense* has probably been introduced into Ireland at some time (ancient or recent), but not by human agency. Long-distance transport by water-fowl seems the most likely explanation of its present European distribution. The Glengarriff record, however, remains problematic". Survey work on the species by Frank Horsman in 2004 and 2005 (details provided to NPWS) shows it to occur in at least 23 sites and that it is spreading. Webb (1957a; 1958a) suggests that should the species show a notable increase in range then it is probably a recent immigrant/introduction by one means or another. The notable increase in range displayed by the species in recent years is suggestive of it being a recent arrival in Ireland [though, note that the first collection of the species from Ireland was in 1906 (Webb 1969), so clearly it is not a very recent arrival], however, whether this was by human, avian or other means is as yet still unclear. As such, it is considered that the species is best regarded as native or alien and that, because of its rarity, Red List assessment rather than inclusion on the Waiting List, following the precautionary approach adopted by Leach and Walker (2013), is justified. It is of note that Ireland holds the majority of the European population of this species.
Hypericum elodes	LC						LC (E,G)		LC	NT	LC	
Hypericum hirsutum	VU	D1			Yes	Yes		V	LC	LC	LC	Records from Cos Armagh, Fermanagh and Tyrone are considered to be erroneous or based on introduced plants/plants of uncertain native/alien status (Faulkner 2015; McNeill 2010; Northridge *et al*. 2014). Recent surveys provide a total population estimate of less than 1000 individuals.
Hypericum humifusum	LC								LC	LC	LC	
Hypericum maculatum	LC								LC	LC	LC	Irish plants are referable to subsp. *obtusiusculum* (Stace 2011).
Hypericum perforatum	LC								LC	LC	LC	
Hypericum pulchrum	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Hypericum tetrapterum	LC								LC	LC	LC	
Hypochaeris glabra	EN	B2ab(i,ii,iv,v)				Yes		IN	VU	VU	LC	Currently known only from Co. Derry from where there are 1987–2014 records from three sites, at two of which recent surveys recorded only a few individuals. Not recorded in recent years from a further site in Co. Derry. Previously recorded from Co. Antrim – last record in 1959 (Beesley 2006).
Hypochaeris radicata	LC								LC	LC	LC	Sell & Murrell (2006) recognise two subspecies, subsp. *radicata* and subsp. *ericetorum*; investigation is required to determine the occurrence and distribution of these in Ireland.
Hypopitys monotropa	NT	A2c				Yes		R	EN	EN	LC	Formerly known as *Monotropa hypopitys*. Decline in Area of Occupancy.
Hypopitys monotropa subsp. *hypophegea*	WL								LC	EN	LC	Formerly known as *Monotropa hypopitys* subsp. *hypophegea*. Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Hypopitys monotropa subsp. *monotropa*	WL								LC	EN	LC	Formerly known as *Monotropa hypopitys* subsp. *hypopitys*. Research and surveys are required to clarify the occurrence, distribution, abundance and conservation status of this subspecies in Ireland.
Ilex aquifolium	LC								LC	LC	LC	
Inula crithmoides	LC								LC	LC	LC	
Inula helenium	LC								LC	NT	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Inula salicina	CR	B2ab(i,ii,iv,v); C2a(i); D			Yes			V				This species has suffered significant declines since it was first recorded in Ireland, particularly since the 1930s. It is now restricted to one site on the shore of Lough Derg where a 2012 survey recorded only a single clump. Efforts to translocate the species to apparently suitable sites elsewhere on the shores of Lough Derg in recent years have met with little success and none of the translocated plants appear to have survived. A second patch of the species translocated from a population in cultivation to a semi-natural garden situation beside Lough Derg still persists (as of 2012). Sell & Murrell (2006) consider the Irish plant to be morphologically closer to subsp. *aspera* (Poir.) Hayek (currently recognised as a separate species, *I. aspera* [http://www.theplantlist.org], which occurs mainly in south-east Europe and south-west Asia), than to subsp. *salicina*, which is more widely distributed in Europe and Asia. They also suggest that its occurrence in Ireland might be attributable to carriage by wildfowl. Further research on this most threatened of Irish species is desirable.
Iris foetidissima	LC								LC	LC	LC	Archaeophyte (Jebb 2014).
Iris pseudacorus	LC						LC (E,G)		LC	LC	LC	
Isatis tinctoria	WL						LC (E)		LC	LC	NA	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). This species was cultivated in Ireland in the 19th century and earlier (Reynolds 2002; Wyse Jackson 2014). It has been recorded from at least two sites since 1970, where the populations appear to have been of only casual occurrence. It is unclear whether or not the plants recorded originated from archaeophyte or more recent stock. Research and surveys are required to clarify the status (archaeophyte/neophyte), distribution, abundance and conservation status of this species in Ireland.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Isoetes echinospora	NT	A2c					LC (E,G)		LC	LC	LC	Formerly known as *Isoetes setacea*. Osborne & Doyle (1992) provide notes on the distribution and Irish sites for the species, and describe the habitat and vegetation communities in which it occurs at a site in Co. Clare. Decline in Area of Occupancy.
Isoetes lacustris	LC						LC (E,G)		LC	LC	LC	
Isolepis cernua	LC						LC (G)		LC	LC	LC	Formerly known as *Scirpus cernuus*.
Isolepis setacea	LC						LC (G)		LC	LC	LC	Formerly known as *Scirpus setaceus*.
Jasione montana	LC								LC	VU	NT	
Juncus acutiflorus	LC						LC (E)		LC	LC	LC	
Juncus acutus	LC						LC (E,G)		LC	LC	LC	
Juncus articulatus	LC						LC (E,G)		LC	LC	LC	
Juncus bufonius	LC						LC (E,G)		LC	LC	LC	
Juncus bulbosus	LC						LC (E,G)		LC	LC	LC	
Juncus bulbosus subsp. *bulbosus*	LC								LC	LC		Assumed to be LC, as species.
Juncus bulbosus subsp. *kochii*	WL								LC	LC		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Juncus compressus	CR	B2ab(i,ii,iv)					LC (G)	R	NT	VU	EN	While mapped as native, the Irish status of this species is regarded as uncertain by Preston *et al*. (2002). Reynolds (2002) and Scannell & Synnott (1987) consider it to be probably introduced, Jebb (2014) to be a neophyte, and Curtis & McGough (1988), Parnell & Curtis (2012), Stace (2011) and Webb *et al*. (1996) to be native. Although of uncertain status in Ireland, this species is declining and under threat, and Red List assessment rather than inclusion on the Waiting List is appropriate; this follows the precautionary approach taken in Great Britain by Leach & Walker (2013) for taxa they term intractable taxa with regard to native/alien status, i.e. taxa for which there will always be doubt about their true status in Great Britain. The River Boyne site (see Perring (1970) and Synnott (1968)) was searched in 2002 and 2006, and the Termonbarry site (see McGough (1988)) in 2005, but the species was not recorded during these surveys and it is considered to have disappeared from these sites. The single remaining Irish site, on the shores of Lough Ree in Co. Roscommon (where it was discovered by Franklyn Perring and David Webb in 1988 (Webb 1989)), was surveyed in 2005 and *c*. 300 plants in two sub-populations were recorded.
Juncus conglomeratus	LC						LC (G)		LC	LC	LC	
Juncus effusus	LC						LC (E,G)		LC	LC	LC	
Juncus filiformis	VU	D2					LC (G)		LC	LC	VU	First recorded in Ireland in 2010, from several sites on the shores of Lough Allen, Co. Leitrim (Curtis 2013).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Juncus foliosus	LC								LC	LC	LC	
Juncus gerardii	LC								LC	LC	LC	Irish plants are referable to subsp. *gerardii* (Sell & Murrell 1996).
Juncus inflexus	LC						LC (G)		LC	LC	LC	
Juncus maritimus	LC								LC	LC	LC	
Juncus ranarius	LC								LC	LC	LC	Formerly known as *Juncus ambiguus*.
Juncus squarrosus	LC								LC	LC	LC	
Juncus subnodulosus	LC						LC (E,G)		LC	LC	LC	
Juniperus communis	LC					Yes	LC (G)		LC	NT	LC	See Cooper *et al*. (2012) for a review of the conservation status of Juniper formations in the Republic of Ireland and Preston *et al*. (2007) for details of the species in Northern Ireland in 2007.
Juniperus communis subsp. *communis*	LC								LC	NT	LC	
Juniperus communis subsp. *nana*	LC								LC	DD	LC	
Kickxia elatine	LC							V	LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Irish plants are probably referable to subsp. *crinita* (Mabille) Greuter (Sell & Murrell 2009).
Knautia arvensis	LC								LC	NT	LC	
Koeleria macrantha	LC								LC	LC	LC	
Lamiastrum galeobdolon	LC							R	LC	LC	LC	The sole native subspecies in Ireland is subsp. *montanum* (Stace 2011). Irish sites for this taxon were comprehensively surveyed in 2012 (Meehan 2013). Records of the widespread neophyte, subsp. *argentatum*, are not included in the assessment.
Lamium album	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Irish plants are referable to subsp. *album* (Sell & Murrell 2009).
Lamium amplexicaule	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Irish plants are referable to subsp. *amplexicaule* (Sell & Murrell 2009).
Lamium confertum	NT	A2c							LC	EN	CR	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Formerly known as *Lamium molucellifolium* (or similar orthographic variants). Decline in Area of Occupancy.
Lamium hybridum	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Lamium purpureum	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Lapsana communis	LC								LC	LC	LC	Native or alien (Jebb 2014). This species is neither rare nor declining and, despite its uncertain status, an assessment of LC is appropriate. Irish plants are referable to subsp. *communis* (Stace 2011).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Lathraea squamaria	LC								LC	LC	LC	
Lathyrus japonicus	VU	D2						IN	LC	LC	RE	Irish plants are referable to subsp. *maritimus* (Stace 2011). Prior to 1980 this species had been recorded from only three sites in Ireland, two in Co. Kerry and a third in Co. Dublin (Beesley 1979; Donaldson & McMillan 1981; Minchin & Minchin 1996; Randall 1977). However, between 1987 and 2006 many new records were made, at sixteen sites on the coasts of Cos Cork, Donegal, Galway, Kerry, Mayo and Wexford. The majority of the records were of single individuals. Details of many of these sites are provided by Akeroyd *et al*. (1996; 2011), Jebb (2013), Minchin & Minchin (1996) and Scannell & Jebb (2000). Drift seeds of the species are regularly stranded on Irish coasts and the recently-recorded populations undoubtedly arose from these; Minchin & Minchin (1996) and Nelson (1986; 2000) discuss the likely origins of these seeds. The majority of the recently-recorded populations have not persisted (most probably lost to winter storms) and, since 2010, only two sites for the species have been reported.
Lathyrus linifolius	LC								LC	NT	LC	Formerly known as *Lathyrus montanus*.
Lathyrus palustris	LC						LC (G)	NT	NT	NT	VU	
Lathyrus pratensis	LC								LC	LC	LC	
Lemna gibba	LC						LC (E,G)		LC	LC	LC	
Lemna minor	LC						LC (E,G)		LC	LC	LC	
Lemna trisulca	LC						LC (E,G)		LC	LC	LC	
Leontodon hispidus	LC								LC	LC	LC	
Leontodon saxatilis	LC								LC	LC	LC	Irish plants are referable to subsp. *saxatilis* (Sell & Murrell 2006).
Lepidium coronopus	LC								LC	LC	LC	Formerly known as *Coronopus squamatus*. British archaeophyte that could be native in Ireland (Jebb 2014); archaeophyte (Williamson *et al*. 2008).
Lepidium heterophyllum	LC						LC (E,G)		LC	LC	LC	Irish plants are referable to subsp. *smithii* (Hook.) P.D. Sell (Sell & Murrell 2014).
Lepidium latifolium	VU	D2					LC (E)		LC	LC	LC	Archaeophyte or neophyte (Jebb 2014). A rare species occurring in less than five localities (mostly in Co. Cork – see O'Mahony (2001a)). While it is uncertain whether or not the present populations derive from archaeophyte or neophyte stock, rather than placing the species on the Waiting List a Red List assessment is made, following the precautionary approach adopted by Leach & Walker (2013) in such cases.
Leucanthemum vulgare	LC								LC	LC	LC	Sell & Murrell (2006) refer the "common plant" to subsp. *vulgare*, and a population from near Cong, Co. Mayo to subsp. *cantabricum* (Sennen) P.D. Sell. Stace (2011) suggests that the presentation of a workable taxonomic scheme for the species is premature in the absence of a systematic survey of wild populations and in the light of much planting from unknown sources on roadsides, etc.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Leucojum aestivum	LC						LC (G)		PL	LC	NA	The sole native subspecies in Ireland is subsp. *aestivum* (Stace 2011). Farrell (1982) provides details of population sizes, distribution, sites and habitats for the species in Ireland. Pearman (2013) concludes that the species is likely to be an introduction in Ireland, while Parnell & Curtis (2012) note it to be "Sometimes an escape from cultivation, but native along the Shannon and in the south-east." Investigation of the native/alien status of Irish populations is merited.
Leymus arenarius	LC								LC	LC	LC	
Ligusticum scoticum	NT	A2c						R	LC	EN		A coastal species with a predominantly Arctic/Sub-Arctic distribution that is showing signs of retreat northwards from its more southern stations in Europe (Crawford 2014), a trend that is evident in Ireland. Decline in Area of Occupancy.
Ligustrum vulgare	WL								LC	LC	LC	Considered to be a very rare native on cliffs, sand dunes and rocky places (Parnell & Curtis 2012), the species is widely planted in hedgerows. Listed as native or alien in Jebb (2014). The presence of neophyte populations and of the similar, non-native *L. ovalifolium* has obscured its native range. Research and surveys are required to clarify the native distribution, abundance and conservation status of this species in Ireland.
Limonium binervosum agg.	LC					Yes[1]		NT	LC	LC	LC	Irish plants in this species aggregate are referable to *L. procerum* and *L. recurvum*. Records of *L. binervosum s.s.* from the south and east coasts are probably all referable to *L. procerum*. [1]Listed as *L. binervosum* on Schedule 8 of the Wildlife (Northern Ireland) Order 1985, as amended.
Limonium humile	LC			Yes					LC	LC	LC	
Limonium procerum	WL								WL	WL	NA	Irish plants are referable to subsp. *procerum* (Stace 2011). Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Limonium recurvum	WL			Yes					VU	VU		Irish plants are referable to subsp. *humile*, subsp. *portlandicum* and subsp. *pseudotranswallianum* (Ingrouille & Stace 1986). See Baker (1954) for details of Irish sites and the history of recording of the various taxa. Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Limonium recurvum subsp. *humile*	WL			Yes				NT	WL	WL		Irish plants are referable to two endemic varieties, var. *donegalense* Ingr. and var. *pseudoparadoxum* Ingr. (Ingrouille & Stace 1986). Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Formerly known as *L. paradoxum* (Pugsley 1931) as, for example, in Curtis & McGough (1988).
Limonium recurvum subsp. *portlandicum*	VU	D2		Yes					WL	WL		Irish plants are referable to the endemic variety, var. *kerryense* Ingr. (Ingrouille & Stace 1986). Known only from two locations in Co. Kerry.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Limonium recurvum subsp. *pseudotranswallianum*	WL		Yes	Yes				NT				Irish endemic (Ingrouille & Stace 1986; Leach & Pearman 2006; Stace 2005). Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland, which is known only from the coast of Co. Clare and from the Aran Islands, Co. Galway. Formerly known as *L. transwallianum*, under which name notes on the discovery and occurrence of the subspecies in Ireland are provided by Pugsley (1930) and Wilmott (1930).
Limosella aquatica	LC				Yes	Yes	LC (G)	R	LC	LC	LC	Details of the occurrence of the species at Irish sites are in Curtis (2013), Curtis *et al*. (1985a; 1987), FitzGerald (1984), Forbes & Northridge (2012), McGough (1983), McMillan (1977), O'Mahony (1996; 1999; 2002; 2005) and White (1985).
Linaria repens	NT	A2c							LC	LC	LC	The Irish status of this species is listed by various authors as native (Praeger 1901), archaeophyte (Williamson *et al*. 2008), possibly introduced (Scannell & Synnott 1987), probably introduced (Webb 1967), certainly introduced (Parnell & Curtis 2012), neophyte (Jebb 2014) and alien (Preston *et al*. 2002). It is a rare species in Ireland, recorded from only eleven hectads since 1987. As such, Red List assessment is justified, despite its uncertain status, rather than inclusion on the Waiting List, following the precautionary approach of Leach & Walker (2013). Losses of 1930–1969 sites are such that an assessment of NT is appropriate. Decline in Area of Occupancy.
Linaria vulgaris	NT	A2c							LC	LC	LC	There is a lack of agreement regarding the status of this species in Ireland; in Scannell & Synnott (1987) it is listed as possibly introduced, "? Native in the North", and O'Mahony (2009) notes that its status in Ireland to be uncertain. Considered native (but possibly alien) in Cos Antrim, Derry and Down (Hackney 1992), probably native in Antrim (Beesley 2006) and probably not native in Tyrone (McNeill 2010). Stace (2011) lists it as native and most Irish records in Preston *et al*. (2002) are mapped as native. Jebb (2014) lists it as neophyte. A species of roadsides, hedgebanks, railway banks, cultivated land, open grassy places, it was noted by Rich *et al*. (2001) to be declining. As such, Red List assessment is justified, despite its uncertain status, rather than inclusion on the Waiting List, following the precautionary approach of Leach & Walker (2013). Bearing in mind that some under-recording is likely, losses of 1930–1969 sites are such that an assessment of NT is most appropriate. Decline in Area of Occupancy.
Linum bienne	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Linum catharticum	LC								LC	LC	LC	
Lithospermum arvense	CR	D							EN	EN	RE	Formerly known as *Buglossoides arvensis*. Archaeophyte or neophyte (Jebb 2014); not now or never has been found in Ireland (Williamson *et al*. 2008). It is mapped as alien (archaeophyte) in Preston *et al*. (2002), but treated as native in Parnell & Curtis (2012) and Scannell & Synnott (1987). Like other weeds of arable crops this species has declined significantly in Ireland and the last confirmed occurrence would appear to be that recorded between 1970 and 1986 from hectad M80 (Preston *et al*. 2002). It is not known whether or not the species persists here (considered unlikely) or has been specifically searced for again and, as such, it cannot be confirmed as RE but, rather, is assessed as CR (recorded population of less than 50 individuals considered likely).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Lithospermum officinale	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Littorella uniflora	LC						LC (E,G)		LC	LC	LC	
Lobelia dortmanna	LC						LC (E,G)		LC	LC	LC	
Lolium perenne	LC						LC (E)		LC	LC	LC	
Lolium temulentum	EN	A2c+3c					LC (E)	EX	CR	CR	RE	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). Assessed as EX in Curtis & McGough (1988), but with note added in press of recent finds in the Aran Islands, Co. Galway – see Curtis *et al.* (1988). Since these finds, however, the species has declined in the Aran Islands, in line with the decline in the Rye crop there.
Lonicera periclymenum	LC								LC	LC	LC	
Lotus corniculatus	LC						LC (E)		LC	LC	LC	The neophyte var. *sativus* Hyl. is found mainly by new roads and in other places sown with grass and wildflower seed-mixes.
Lotus pedunculatus	LC						LC (E)		LC	LC	LC	Formerly known as *Lotus uliginosus*.
Lotus subbiflorus	NT	A3c			Yes			R	LC	LC	VU	Formerly known as *Lotus hispidus*. See Akeroyd *et al.* (1996) for Co. Cork records for the species; FitzGerald (1993b) details the discovery of the species in Co. Wexford. Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Luronium natans	WL						LC (E,G)		LC	NT	LC	Native or alien (Jebb 2014). The occurrence of flowering plants of this species at a site in Connemara, Co. Galway is reported by Rich *et al.* (1995) and this site is included by Stace (2011) in the native range of the species. However, there is uncertainty surrounding the origin of the species here – see notes in Preston & Croft (1997), for example, and its status remains unresolved. It is of note, in this regard, that the population of the species at the Connemara site would appear to be increasing, being recorded from three loughs and two streams during a 2012 survey, an expansion in range from that described in 1995 and suggestive of it being a relatively recent introduction here. Further monitoring of the population would be beneficial to help resolve its status. Other Irish records for the species are based on non-flowering material and, because of the difficulties in distinguishing this from that of *Baldellia ranunculoides*, are regarded as requiring confirmation. The presence of a population of *Baldellia ranunculoides* subsp. *repens* in the Killarney lakes, Co. Kerry has led to much confusion and rescinding of records for *Luronium natans* from here over the years (see, for example, notes in Scully (1916)) – while it may be present in Co. Kerry, nobody has yet come up with a flowering specimen. The species is placed on the Waiting List pending research to clarify its origin, status and population trend in Connemara, and to assess and survey for its possible occurrence at other Irish sites for which there are records. Kay *et al.* (1999) investigated genetic variation in 100 samples of the species from 16 sites in Wales; they also included a single sample from the Connemara population, which turned out to be "fairly widely separated from [most of] the other populations".

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Luzula campestris	LC								LC	LC	LC	
Luzula multiflora	LC								LC	LC	LC	
Luzula multiflora subsp. *congesta*	LC								LC	LC	LC	
Luzula multiflora subsp. *hibernica*	LC		Yes	Yes								Irish endemic (Stace 2005). Noted in Rich & Jermy (1998) to be probably widespread in Ireland. See Kirschner & Rich (1996) for details.
Luzula multiflora subsp. *multiflora*	LC								LC	LC	LC	
Luzula pallescens	RE								CR	CR		Formerly known as *Luzula pallidula*. There are records from two sites in Ireland, in Co. Antrim (in 1970) and Co. Offaly (1950s), but recent surveys of the recorded sites have failed to refind the species – see Harron (1986), Kirschner & Rich (1993), Rich (1994), Rich & Lamb (1995), and the species is considered to be RE in Ireland (a conclusion that was also arrived at by Rich (1995)). Jebb (2014) lists the occurrence of this species in Ireland as "error".
Luzula pilosa	LC								LC	LC	LC	
Luzula sylvatica	LC								LC	LC	LC	
Lycopodiella inundata	VU	A2c; B2ab(i,ii,iii)			Yes	Yes	LC (G)	R	EN	EN	VU	Formerly known as *Lycopodium inundatum*, *Lepidotis inundata*. Smyth *et al*. (2015) review the status of the species in the Republic of Ireland. Declines in Area of Occupancy, Extent of Occurrence and habitat quality.
Lycopodium clavatum	NT	A2c+3c				Yes	LC (E)		LC	VU	LC	Smyth *et al*. (2015) review the status of the species in the Republic of Ireland. Significant losses of pre-1930 sites, particular from lowland situations. Continued decline since (and as indicated in Rich *et al*. (2001)). Part of the recent decline is likely to be attributable to be a degree of under-recording (see Smyth *et al*. 2015), particularly in upland situations. Decline in Area of Occupancy; future population reduction suspected.
Lycopus europaeus	LC						LC (E,G)		LC	LC	LC	
Lysimachia nemorum	LC								LC	LC	LC	
Lysimachia nummularia	LC						LC (E,G)		LC	LC	LC	Native, with small original range, now widespread (Jebb 2014).
Lysimachia vulgaris	LC						LC (E,G)		LC	LC	LC	
Lythrum portula	LC						LC (E,G)		LC	LC	LC	
Lythrum portula subsp. *longidentatum*	WL								WL			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Records are mapped in Perring & Sell (1968).
Lythrum portula subsp. *portula*	LC								WL			Assumed to be LC, as species.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Lythrum salicaria	LC						LC (E,G)		LC	LC	LC	
Malus pumila	LC											Formerly known as *Malus domestica*. Apple. Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Malus sylvestris	LC						DD (E,G)		LC	LC	LC	Crab Apple.
Malva arborea	LC								LC	LC	LC	Formerly known as *Lavatera arborea*. Native, with small original range, now widespread (Jebb 2014).
Malva neglecta	NT	A2c							LC	LC	NT	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Area of Occupancy.
Malva sylvestris	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Marrubium vulgare	WL								LC	LC	NT	Archaeophyte (Jebb 2014). Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Matricaria chamomilla	LC								LC	LC	LC	Formerly known as *Matricaria recutita*. Archaeophyte or neophyte (Jebb 2014); neophyte (Williamson *et al*. 2008). This species occurs most commonly as a casual of disturbed ground, roadsides, ports, etc. and is rare as an arable weed. It is widespread in Ireland and not significantly declining, and although of uncertain status, an assessment of LC is appropriate. Some under-recording is likely, due to its similarity to the commonly-occurring *Tripleurospermum inodorum*.
Matthiola sinuata	RE							EX	VU	VU	LC	The last confirmed Irish records for the species are those made in 1925 from sea cliffs at Kilmichael Point, Co. Wexford (Stelfox 1926) and in 1933 from sand dunes east of Ballyvaughan in Co. Clare (Webb & Scannell 1983); subsequent records would all appear to be erroneous or unconfirmed.
Meconopsis cambrica	LC								LC	LC	LC	Native, with small original range, now widespread (Jebb 2014). Assessment based on native occurrences. Preston *et al*. (2012) carried out genetic analyses of native and introduced populations of this species from England and Wales and conclude that, to a large extent, the distinction between the native and introduced populations is supported by the molecular evidence.
Medicago lupulina	LC						LC (E)		LC	LC	LC	
Melampyrum pratense	LC								LC	NT	LC	Irish plants are referable to subsp. *pratense* (Stace 2011). The possible occurrence of subsp. *commutatum* requires investigation.
Melampyrum sylvaticum	EN	B2ab(i,ii,iv)				Yes		V	EN	RE	RE	A northern species in Ireland which has become increasingly rare, having disappeared from many previously known sites (http://www.habitas.org.uk/priority/species.asp?item=4139); Beesley (2006) describes the species as being probably on the verge of extinction.
Melica uniflora	LC								LC	LC	LC	
Melilotus altissimus	LC								LC	LC	LC	Archaeophyte or neophyte (Jebb 2014); archaeophyte (Williamson *et al.* 2008). This species occurs in abundance in sites about Belfast, Cork, Dublin and Rosslare, in particular. It is not significantly declining and, despite its uncertain status, an assessment of LC is appropriate.
Mentha aquatica	LC						LC (E,G)		LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Mentha arvensis	LC						LC (G)		LC	NT	VU	Although this species has shown declines it is still widespread in Ireland, present in a large number of sites, often in abundance, and an assessment of LC is appropriate.
Mentha pulegium	EN	A2c; B2ab(ii,iv)			Yes	Yes	LC (E,G)	V	EN	CR	CR	Native or alien (Jebb 2014). The assessment does not include records for recent introductions (sometimes recorded as *M. pulegium* var. *erecta* (Mill.) Syme) – see O'Mahony (2001b) for a review. Recorded as a native from four sites since 1987, at one of which the species was lost in 1990.
Menyanthes trifoliata	LC						LC (E,G)		LC	LC	LC	
Mercurialis perennis	WL								LC	LC	LC	Native or alien (Jebb 2014). Listed in Parnell & Curtis (2012) as probably or possibly introduced, its occurrence in Ireland is given as "Woods and shady places, usually in estates, where it may be introduced, but possibly native in one or two places in the Burren; very rare." See Akeroyd & Parnell (1981), Boatman (1966), Curtis (1981), Lambe *et al*. (1978) and Webb (1978) for details of the Irish occurrence of the species and consideration of its status. Webb & Scannell (1983) accept it as probably native in the Burren, "with a slight doubt". Given the uncertainty regarding the status of this species and the possibility of its rare occurrence as a native, it is most appropriately placed on the Waiting List pending research into these areas.
Mertensia maritima	VU	B2ab(iii)			Yes	Yes		R	NT	RE	RE	Farrell & Randall (1992) provide details of Irish sites. A coastal species with a predominantly Arctic/Sub-Arctic distribution that is showing signs of retreat northwards from its more southern stations in Europe (Crawford 2014), a trend that is evident in Ireland. Decline in Area of Occupancy.
Mibora minima	VU	D2							LC	NT	LC	A recently discovered, diminutive species which is known in Ireland from a single site, in Co. Cork – see O'Mahony (2006a; 2007) for details. While it is generally considered to be native here (Jebb 2014; O'Mahony 2006a; Parnell & Curtis 2012), the possibility that it was inadvertently introduced with holiday-makers cannot be entirely ruled out. Pearman (2011) notes that there is confusion over the status of the species at most of its English sites. Following the precautionary approach adopted by Leach & Walker (2013) for taxa of uncertain status, Red List assessment rather than inclusion of the species on the Waiting List is considered appropriate.
Milium effusum	LC								LC	LC	LC	
Minuartia recurva	VU	D1			Yes			R				Originally known in Ireland only from the Caha Mountains, on the border of Cos Cork and Kerry (Moore 1966), a new site for the species was discovered in 2001 (Green 2007; 2008a) in the Comeragh Mountains, Co. Waterford. The species is not known to occur in Great Britain.
Minuartia verna	LC								NT	LC	VU	Beesley (2006) notes that the species has suffered at many of its Co. Antrim sites through overgrazing. It should be monitored here and throughout its Irish range.
Misopates orontium	EN	D			Yes			V	VU	VU	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). The latest counts from known Irish sites indicate a population of less than 250 individuals.
Moehringia trinervia	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Molinia caerulea	LC								LC	LC	LC	Two subspecies are recognised (Stace 2011). However, these overlap with regard to morphology and ecology, leading some authors to question their taxonomic validity (Cope & Gray 2009; Stroh *et al*. 2015).
Molinia caerulea subsp. *arundinacea*	LC								WL	WL	WL	Formerly known as *Molinia caerulea* subsp. *altissima*. It is considered likely to be under-recorded.
Molinia caerulea subsp. *caerulea*	LC								LC	LC	LC	
Montia fontana	LC						LC (E,G)		LC	LC	LC	
Montia fontana subsp. *amporitana*	LC								WL	WL	LC	
Montia fontana subsp. *chondrosperma*	LC								LC	LC	LC	
Montia fontana subsp. *fontana*	LC								LC	LC	LC	
Montia fontana subsp. *variabilis*	LC								WL	WL	LC	
Myosotis arvensis	LC								LC	LC	LC	British archaeophyte that could be native in Ireland (Jebb 2014); archaeophyte (Williamson *et al*. 2008).
Myosotis discolor	LC								LC	LC	LC	Represented in Ireland by subsp. *discolor* (Sell & Murrell 2009); the possible occurrence of subsp. *dubia* requires investigation.
Myosotis laxa	LC						LC (E,G)		LC	LC	LC	
Myosotis ramosissima	LC								LC	LC	LC	Represented in Ireland by subsp. *ramosissima* (Sell & Murrell 2009); the possible occurrence of other infraspecific taxa requires investigation.
Myosotis scorpioides	LC						LC (E)		LC	LC	LC	
Myosotis secunda	LC						LC (E,G)		LC	LC	LC	
Myrica gale	LC								LC	NT	LC	
Myriophyllum alterniflorum	LC						LC (E,G)		LC	LC	LC	
Myriophyllum spicatum	LC						LC (E,G)		LC	LC	LC	
Myriophyllum verticillatum	LC						LC (E,G)		VU	NT	VU	
Najas flexilis	NT	A2c		Yes	Yes		VU (E) LC (G)	R	LC	RE		Listed on Annex II of the E.U. Habitats Directive – see NPWS (2013c) and O Connor (2013) for a review of its conservation status and for relevant references. Decline in Area of Occupancy.
Nardus stricta	LC								LC	NT	LC	
Narthecium ossifragum	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Nasturtium microphyllum	LC						LC (E,G)		LC	LC	LC	Formerly known as *Rorippa microphylla*.
Nasturtium officinale	LC						LC (E,G)		LC	LC	LC	Formerly known as *Rorippa nasturtium-aquaticum*.
Neotinea maculata	NT	A3c				Yes	LC (E)					Formerly known as *Neotinea intacta*. See Allott (1982), Duffy *et al*. (2009), Forbes & Northridge (2012), O'Mahony (1974), Phillips (1990), Reynolds (2013), Rich (2008), Sheppard & Sheppard (1985), Synnott (1984), Webb (1957b; 1958b; 1980), Webb & Scannell (1983) and White & Doyle (1978) for details of Irish sites. Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Neottia cordata	LC						LC (E)		LC	LC	LC	Formerly known as *Listera cordata*.
Neottia nidus-avis	LC						LC (E,G)	NT	NT	VU	LC	
Neottia ovata	LC						LC (E)		LC	LC	LC	Formerly known as *Listera ovata*.
Nuphar lutea	LC						LC (E,G)		LC	LC	LC	
Nymphaea alba	LC						LC (E,G)		LC	LC	LC	
Nymphaea alba subsp. *alba*	LC								PL	LC		Assumed to be LC, as species.
Nymphaea alba subsp. *occidentalis*	WL								PL			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Cheffings & Farrell (2005) and Stace (2011) note the occurrence of intermediates between this and subsp. *alba*.
Odontites vernus	LC								LC	LC	LC	
Odontites vernus subsp. *serotinus*	LC								LC	LC	LC	
Odontites vernus subsp. *vernus*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Oenanthe aquatica	LC						LC (E,G)		LC	LC	LC	
Oenanthe crocata	LC						LC (E)		LC	LC	LC	
Oenanthe fistulosa	NT	A2c					LC (E,G)		LC	VU	LC	Decline in Area of Occupancy.
Oenanthe fluviatilis	LC						NT (E,G)		LC	LC		
Oenanthe lachenalii	LC								LC	NT	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Oenanthe pimpinelloides	NT	A3c						R	LC	LC	CR	Scott & Sheehy Skeffington (1987) and FitzGerald (2003) describe the discovery and ecology of this species at sites in Cos Clare and Kerry; there is uncertainty attached to the status of these populations, which may be native or may, perhaps, have originated from imported hayseed. Green (2008c) notes the species, appearing native, at a site in Co. Wexford. Parnell & Curtis (2012) list the species as probably or possibly introduced. Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Ononis repens	LC								LC	LC	LC	Only subsp. *repens* has been distinguished in Ireland and it is likely that all Irish plants are referable to this.
Ophioglossum azoricum	NT	A2c							LC	LC	VU	This is almost confined to coastal sites in Ireland and Great Britain, the only Irish inland site being in the Comeragh Mountains (Green 2008a). Paul (1987) reviews the status of the species in Great Britain and Ireland and lists two Irish sites (both in Co. Kerry). Decline in Area of Occupancy.
Ophioglossum vulgatum	LC								LC	LC	LC	Diminutive plants of this species occur in the Galtee Mountains (Reynolds 2015) and perhaps elsewhere.
Ophrys apifera	LC					Yes	LC (E)	NT	LC	LC	LC	Sell & Murrell (1996) refer most British and Irish plants to subsp. *apifera*.
Ophrys insectifera	NT	A3c					LC (E,G)		VU	VU	VU	Future population reduction suspected; the future prospects for its main habitats are assessed as unfavourable (NPWS 2013a; 2013b).
Orchis mascula	LC						LC (E)		LC	LC	LC	Irish plants are referable to subsp. *mascula* (Sell & Murrell 1996).
Oreopteris limbosperma	LC								LC	LC	LC	
Origanum vulgare	LC								LC	LC	LC	Irish plants are referable to subsp. *vulgare* (Sell & Murrell 2009).
Ornithopus perpusillus	LC					Yes		R	LC	LC	LC	
Orobanche alba	LC								LC	LC		
Orobanche hederae	LC					Yes		NT	LC	LC	LC	
Orobanche rapum-genistae	NT	A2c						R	NT	VU	LC	Decline in Area of Occupancy.
Orthilia secunda	VU	D2				Yes		EN	LC	NT	EN	Described as teetering on the brink of extinction in Ireland (Forbes & Northridge 2012), between 1987 and 2014 this species was recorded from only three sites in Ireland, in Cos Antrim, Fermanagh and Mayo. The Co. Antrim site holds a small population of *c.* 25 rosettes (Northridge & Northridge 1997), while the total area occupied by the species in Co. Mayo is 50–60 square metres (FitzGerald 2004). The Co. Fermanagh population is the largest, but occurs within only one 10 x 10 km grid square – Forbes & Northridge (2012) consider that it would be threatened by forestry operations, including fires and fertiliser spraying. The species has been lost from a site in Co. Offaly (Moore 1954; 1956) due to peat extraction (last recorded in 1959) and has not been recorded at a site in Co. Derry since 1888. Global climatic warming is considered to pose a threat to the long-term survival of the species in Ireland (http://www.habitas.org.uk/priority/splist.asp?Type=Vascular%20Plants).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Osmunda regalis	LC						LC (G)		LC	LC	LC	
Oxalis acetosella	LC								LC	NT	LC	
Oxyria digyna	LC								LC	LC	LC	
Papaver argemone	VU	A2c; B2ab(i)							VU	EN	EN	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Extent of Occurrence.
Papaver dubium	LC								LC	LC	LC	Formerly known as *P. dubium* subsp. *dubium*. Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Papaver hybridum	RE				Yes			EN	LC	LC	EN	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). Recorded from Co. Down in 1970 (Reynolds 2002) but not since and the species was considered to be probably extinct in the county by Day & Hackney (2004). Otherwise, the only records since 1970 of plants potentially derived from archaeophyte stock were from north Co. Dublin, where the species was last recorded in 1985. Subsequent searches of the Dublin site have failed to record the species and it is considered to be RE.
Papaver lecoqii	LC								LC	LC	LC	Formerly known as *P. dubium* subsp. *lecoqii*. Archaeophyte (Jebb 2014).
Papaver rhoeas	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Papaver somniferum	LC								LC	LC	LC	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008).
Parapholis incurva	EN	A2a; B2ab(v)							LC	LC	LC	See Akeroyd (1984) for details of the discovery of the species in Ireland. Decline in Area of Occupancy. The latest counts from known Irish sites (all are in Co. Dublin) indicate a population of less than 250 individuals.
Parapholis strigosa	LC								LC	LC	LC	
Parentucellia viscosa	NT	A2c							LC	LC	NT	Decline in Area of Occupancy.
Parietaria judaica	LC								LC	LC	LC	
Parnassia palustris	LC						LC (G)		LC	VU	LC	
Pedicularis palustris	LC						LC (G)		LC	VU	LC	Irish plants are referable to subsp. *palustris* (Sell & Murrell 2009).
Pedicularis sylvatica	LC								LC	VU	LC	
Pedicularis sylvatica subsp. *hibernica*	LC			Yes					LC	DD	LC	See Rich & Jermy (1998), Rumsey (2015) and Webb (1956) for details of this subspecies in Ireland and elsewhere.
Pedicularis sylvatica subsp. *sylvatica*	LC								LC	VU	LC	
Persicaria amphibia	LC						LC (E,G)		LC	LC	LC	Formerly known as *Polygonum amphibium*.
Persicaria hydropiper	LC						LC (E,G)		LC	LC	LC	Formerly known as *Polygonum hydropiper*.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Persicaria lapathifolia	LC						LC (E,G)		LC	LC	LC	Formerly known as *Polygonum lapathifolium*. Native or alien (Jebb 2014). This species is neither rare nor significantly declining and, despite its uncertain status, an assessment of LC is appropriate.
Persicaria maculosa	LC						LC (E,G)		LC	LC	LC	Formerly known as *Polygonum persicaria*.
Persicaria minor	LC								VU	LC	LC	Formerly known as *Polygonum minus*.
Persicaria mitis	LC								VU	VU	VU	Formerly known as *Polygonum mite*. *Persicaria dubia* (Stein) Fourr. is the name used for this species in Akeroyd (2014). See Forbes & Northridge (2012), Parnell & Simpson (1988) and Webb (1984) for details of Irish records.
Persicaria vivipara	VU	D1			Yes			IN	LC	LC	VU	Formerly known as *Polygonum viviparum*. Curtis (1993) provides details of Irish sites.
Petasites hybridus	LC								LC	LC	LC	Irish plants are referable to subsp. *hybridus* (Sell & Murrell 2006).
Petroselinum crispum	LC								LC	LC	NT	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Phalaris arundinacea	LC						LC (E,G)		LC	LC	LC	
Phegopteris connectilis	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Phleum arenarium	LC								LC	NT	LC	
Phleum bertolonii	LC								LC	LC	LC	
Phleum pratense	LC						LC (E)		LC	LC	LC	
Phragmites australis	LC						LC (E,G)		LC	LC	LC	
Pilosella officinarum	LC								LC	LC	LC	Formerly known as *Hieracium pilosella*. Sell & Murrell (2006) distinguish seven subspecies, all of which have been reported from Ireland (Scannell & Synnott 1987); Stace (2011) considers these to merit no more than varietal rank.
Pilularia globulifera	VU	A2c			Yes		NT (E,G)	R	NT	VU	LC	Decline in Area of Occupancy.
Pimpinella major	LC								LC	LC	NA	
Pimpinella saxifraga	LC								LC	LC	LC	Irish plants are referable to subsp. *saxifraga sensu* Sell & Murrell (2009).
Pinguicula grandiflora	LC										NA	Irish plants are referable to subsp. *grandiflora* (Sell & Murrell 2009).
Pinguicula lusitanica	LC								LC	LC	EN	
Pinguicula vulgaris	LC						LC (E)		LC	VU	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Pinus sylvestris	WL						LC (G)		LC	WL	NA	Long considered extinct in Ireland as a native, but now a widespread neophyte planted for forestry and landscaping (Jebb 2014). Some earlier plantings support vegetation similar to that found in the native Caledonian pine forests of Scotland – see, for example, Roche *et al*. (2009; 2015). Over the years there has been much speculation regarding the possibility that the species may have persisted at one or more Irish sites and, on the basis of recent research carried out at Trinity College, Dublin, it has been demonstrated that it did indeed survive to the present day in at least one site, at Rockforest, Co. Clare (McGeever & Mitchell 2016). In England it is a widely planted neophyte, but it may also be archaeophyte there, with possible remnant native populations occurring in two locations in Northumberland – for which reasons it is included on the Waiting List in Stroh *et al*. (2014). It is listed as an alien in Wales (Dines 2008). Native plants are often distinguished as subsp. *scotica* (Stace 2011). The species is placed on the Waiting List pending further research and surveys to gather data to enable Red List assessment to be undertaken.
Plantago coronopus	LC								LC	LC	LC	
Plantago lanceolata	LC								LC	LC	LC	
Plantago major	LC						LC (G)		LC	LC	LC	
Plantago major subsp. *intermedia*	LC								LC	LC	LC	Akeroyd & Doogue (1988) provide details of Irish sites.
Plantago major subsp. *major*	LC								LC	LC	LC	
Plantago maritima	LC						LC (G)		LC	LC	LC	
Platanthera bifolia	LC						LC (E)		VU	EN	LC	
Platanthera chlorantha	LC						LC (E)		NT	LC	LC	
Poa alpina	EN	D					LC (E)	R	LC	VU	EN	The latest counts from known Irish sites (Cos Kerry and Sligo) indicate a population of less than 250 individuals.
Poa annua	LC						LC (G)		LC	LC	LC	
Poa humilis	LC								LC	LC	LC	Formerly known as *Poa subcaerulea*.
Poa infirma	WL								LC	LC		Recorded from Co. Cork (Selby 2000) in what was described as the "first *native* Irish site" for the species (O'Mahony 2001c); Reynolds (2002) notes its possible native status here and the site is included in the native range of the species in Stace (2011). Whilst noting the possibility of it being native in Co. Cork, Jebb (2014) lists the species as neophyte. Research and surveys are required to clarify the native/alien status, distribution, abundance and conservation status of this species in Ireland.
Poa pratensis	LC						LC (E,G)		LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Poa trivialis	LC								LC	LC	LC	
Polygala serpyllifolia	LC								LC	NT	LC	
Polygala vulgaris	LC								LC	LC	LC	Irish plants are referable to subsp. *vulgaris* (Stace 2011). The possible occurrence of subsp. *collina* requires investigation.
Polygonum arenastrum	LC								LC	LC	LC	British archaeophyte that could be native in Ireland (Jebb 2014); archaeophyte (Williamson *et al.* 2008).
Polygonum aviculare	LC								LC	LC	LC	
Polygonum maritimum	RE							R	VU	VU		First recorded from Ireland in 1973 (Ferguson & Ferguson 1974) at Tramore, Co. Waterford and one plant was seen the following year (Akeroyd 2014; Green 2008a). Regular targeted surveys since at Tramore, the only confirmed Irish site, have failed to record the species and it is considered to be RE.
Polygonum oxyspermum	LC								LC	LC	LC	Irish plants are referable to subsp. *raii* (Stace 2011).
Polypodium cambricum	LC								LC	LC	LC	Formerly known as *Polypodium australe*. Hackney (1977; 1982) provides details of sites for the species in Northern Ireland.
Polypodium interjectum	LC								LC	LC	LC	
Polypodium vulgare	LC								LC	LC	LC	
Polystichum aculeatum	LC								LC	LC	LC	
Polystichum lonchitis	VU	D1				Yes		R	VU	EN	LC	Recent surveys provide a total population estimate of less than 1000 individuals.
Polystichum setiferum	LC								LC	LC	LC	
Populus nigra	WL						LC (G)		LC	LC	LC	The two main *Populus nigra* taxa recorded from Ireland are cv. '*Italica*' (Lombardy Poplar, the familiar upright tree usually planted for screening and windbreak purposes) and subsp. *betulifolia* (Black Poplar). While cv. '*Italica*' is neophyte, subsp. *betulifolia* is native or alien (Jebb 2014); it has been suggested that *P. nigra* might be native in the Midlands (Hobson 1991; 1993). Research and surveys are required to clarify the distribution, abundance and conservation status of subsp. *betulifolia* in Ireland, and to assess the native/alien status of populations and of individual trees.
Populus tremula	LC								LC	LC	LC	
Potamogeton alpinus	LC						LC (E,G)		LC	VU	CR	
Potamogeton berchtoldii	LC						LC (E,G)		LC	LC	LC	
Potamogeton coloratus	LC						LC (E,G)		LC	LC	LC	
Potamogeton crispus	LC						LC (E,G)		LC	LC	LC	
Potamogeton filiformis	LC						LC (E)		LC	RE	RE	

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Potamogeton friesii	LC						LC (E,G)		NT	VU	NT	
Potamogeton gramineus	LC						LC (E,G)		LC	NT	LC	
Potamogeton lucens	LC						LC (E,G)		LC	LC	EN	
Potamogeton natans	LC						LC (E,G)		LC	LC	LC	
Potamogeton obtusifolius	LC						LC (E,G)		LC	LC	LC	
Potamogeton pectinatus	LC								LC	LC	LC	
Potamogeton pectinatus x *vaginatus* = *P.* x *bottnicus*	WL											An interspecific hybrid of particular interest for the fact that one parent, *P. vaginatus*, is not known from Ireland. It is recorded from the River Liffey in Cos Dublin and Kildare (McMullan *et al*. 2011; Stace *et al*. 2015). Research and surveys are required to clarify the distribution, abundance and conservation status of this hybrid in Ireland.
Potamogeton perfoliatus	LC						LC (E,G)		LC	LC	LC	
Potamogeton polygonifolius	LC						LC (E,G)		LC	LC	LC	
Potamogeton praelongus	LC						LC (E,G)		NT	EN	CR	
Potamogeton pusillus	LC						LC (E,G)		LC	LC	LC	
Potentilla anglica	LC								LC	LC	LC	
Potentilla anserina	LC								LC	LC	LC	
Potentilla erecta	LC								LC	NT	LC	
Potentilla erecta subsp. *erecta*	LC								LC	NT	LC	
Potentilla erecta subsp. *strictissima*	LC								LC	DD	LC	See Rich & Scannell (1990) for details of Irish records.
Potentilla fruticosa	VU	B2ab(ii,iv)						R	NT	NT	NA	Decline in Area of Occupancy.
Potentilla reptans	LC								LC	LC	LC	
Potentilla sterilis	LC								LC	LC	LC	
Poterium sanguisorba	LC								LC	LC	LC	Formerly known as *Sanguisorba minor*. Irish plants are referable to subsp. *sanguisorba* (Stace 2011).
Primula veris	LC					Yes		NT	LC	LC	LC	
Primula vulgaris	LC					Yes[1]			LC	LC	LC	Irish plants are referable to subsp. *vulgaris* (Sell & Murrell 2014). [1]Listed on Part 2 of Schedule 8 of the Wildlife (Northern Ireland) Order 1985, as amended.
Prunella vulgaris	LC						LC (G)		LC	LC	LC	

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Prunus avium	LC						LC (E)		LC	LC	LC	Native Irish plants are referable to subsp. *silvestris* (Kirschl.) Asch. & Graebn. (Sell & Murrell 2014).
Prunus cerasus	LC								LC	NT	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Prunus domestica	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Prunus domestica subsp. *domestica*	LC								LC	LC	LC	Plum. *P. domestica* is archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Prunus domestica subsp. *insititia*	LC								LC	LC	LC	Bullace, Damson. *P. domestica* is archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Prunus domestica subsp. *italica*	WL								LC	LC	LC	Greengage. *P. domestica* is archaeophyte (Jebb 2014; Williamson *et al*. 2008). Research and surveys are required to clarify the status (archaeophyte or neophyte), distribution in the wild, abundance and conservation status of this subspecies in Ireland. The subspecific epithet used here follows Sell & Murrell (2014) and Stace *et al*. (2015) [= subsp. *x italica* in Stace (2011)].
Prunus padus	LC						LC (E)	NT	LC	LC	LC	
Prunus spinosa	LC						LC (E)		LC	LC	LC	
Pseudorchis albida	VU	A2c			Yes	Yes	LC (E)	V	VU	VU	CR	Irish plants are referable to subsp. *albida* (Sell & Murrell 1996). Cotton *et al*. (1994) provide details of sites in Cos Galway, Leitrim and Sligo. Duffy *et al*. (2011) examine genetic diversity in Irish populations of the species. Sites for the species are vulnerable to changes in landuse practices, e.g. afforestation, agricultural improvement/reclamation, changes in grazing regime and, in recent years, there have been losses of and declines in populations due to these activities. Jersáková *et al*. (2011) provide information on the habitats of and threats to the species in Ireland.
Pteridium aquilinum	LC								LC	LC	LC	Irish plants are referable to subsp. *aquilinum* (Stace 2011).
Puccinellia distans	LC								LC	LC	LC	Irish plants are referable to subsp. *distans* (Stace 2011).
Puccinellia fasciculata	NT	A2c+3c			Yes			R	NT	NT	RE	Irish plants are referable to subsp. *fasciculata* (Sell & Murrell 1996). Decline in Area of Occupancy; future population reduction suspected.
Puccinellia maritima	LC								LC	LC	LC	Reynolds (2006) sets out the taxonomic history of tussock-forming *P. maritima* in Ireland and clarifies the application of the various names that have been applied to this.
Pulicaria dysenterica	LC								LC	LC	LC	
Pyrola media	NT	A2c						R	VU	EN		Decline in Area of Occupancy.
Pyrola minor	NT	A2c							LC	NT	EN	Decline in Area of Occupancy.
Pyrola rotundifolia	NT	A3c						R	LC	LC	LC	Cross (1986) provides details of habitats and Irish sites known at the time for both subspecies. Future population reduction suspected; the future prospects for its main habitats are assessed as unfavourable (NPWS 2013a; 2013b).

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Pyrola rotundifolia subsp. *maritima*	VU	D2			Yes			V	LC	LC	LC	Known from only three sites, in Cos Donegal, Sligo and Wexford. Cotton (1974) provides details of the Co. Wexford site.
Pyrola rotundifolia subsp. *rotundifolia*	NT	A3c							NT	VU		Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Quercus petraea	LC								LC	LC	LC	
Quercus robur	LC						LC (G)		LC	LC	LC	
Radiola linoides	NT	A2c							NT	VU	LC	Decline in Area of Occupancy.
Ranunculus acris	LC								LC	LC	LC	
Ranunculus acris subsp. *acris*	LC								LC			Assumed to be LC, as species. See Stace (2011) for details.
Ranunculus acris subsp. *borealis*	WL								DD			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Its presence in western and central Ireland is noted in Stace (2011).
Ranunculus aquatilis	LC						LC (E,G)		LC	LC	LC	
Ranunculus auricomus	LC								LC	LC	LC	
Ranunculus baudotii	NT	A2c					LC (E,G)		LC	LC	LC	Decline in Area of Occupancy.
Ranunculus bulbosus	LC								LC	LC	LC	
Ranunculus circinatus	LC						LC (E)		LC	LC	LC	
Ranunculus flammula	LC						LC (E,G)		LC	VU	LC	
Ranunculus flammula subsp. *flammula*	LC								LC	LC		
Ranunculus flammula subsp. *minimus*	WL								DD			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. See Jonsell (2001), Preston & Croft (1997), Preston *et al*. (2002) and Rich & Jermy (1998) for details.
Ranunculus flammula subsp. *scoticus*	WL			Poss					DD			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. See Jonsell (2001), Preston & Croft (1997), Preston *et al*. (2002) and Rich & Jermy (1998) for details.
Ranunculus fluitans	VU	D2				Yes	LC (E,G)	R	LC	LC	LC	Bradley *et al.* (2013) investigate the genetic diversity of this species and map its distribution at its sole Irish site, the Six Mile Water, Co. Antrim. Given its highly restricted distribution they consider it to be "particularly vulnerable to extinction via stochastic effects including flooding, pollution and disease" and that herbivory by the invasive amphipod *Gammarus pulex* (L.) may also represent a threat.
Ranunculus hederaceus	LC						LC (E,G)		LC	LC	LC	

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Ranunculus lingua	LC						LC (E,G)		LC	LC	LC	
Ranunculus omiophyllus	LC						LC (E)		LC	LC	LC	
Ranunculus peltatus	LC						LC (E,G)		LC	LC	LC	
Ranunculus penicillatus	LC						LC (E,G)		LC	LC	LC	Webster (1991) provides details of the species in Ireland.
Ranunculus penicillatus subsp. *penicillatus*	LC								LC	LC	LC	Webster (1991) provides details of this subspecies in Ireland.
Ranunculus penicillatus subsp. *pseudofluitans*	VU	D2							LC	LC	LC	Known from a single site in Co. Derry (Hackney 1992; Webster 1991).
Ranunculus repens	LC						LC (E)		LC	LC	LC	A widespread and variable species. An unusual form characterized by glabrous, highly-dissected leaves occurs in turloughs (Lynn & Waldren 2001).
Ranunculus sceleratus	LC						LC (E,G)		LC	LC	LC	
Ranunculus trichophyllus	LC						LC (E,G)		LC	LC	LC	Irish plants are referable to subsp. *trichophyllus* (Cook 1993).
Ranunculus tripartitus	CR	D					LC (E)	R	EN	EN	LC	In Ireland this species has been confirmed from only a single site (in Co. Cork) where it was first recorded by Phillips (1896); see also Groves & Groves (1896). It was refound here in 2000 and a survey in 2007 recorded a total population of 40–50 individuals.
Raphanus raphanistrum	LC						LC (E)		LC	LC	LC	Includes native and archaeophyte subspecies (Jebb 2014).
Raphanus raphanistrum subsp. *maritimus*	LC								LC	LC	LC	
Raphanus raphanistrum subsp. *raphanistrum*	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Reseda luteola	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Rhamnus cathartica	LC								LC	LC	LC	
Rhinanthus minor	LC								LC	LC	LC	
Rhinanthus minor subsp. *borealis*	WL								DD			Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. The validity of Irish records mapped in Perring & Sell (1968), and noted in Sell & Murrell (2009) and Stace (2011) requires investigation.
Rhinanthus minor subsp. *minor*	LC								WL	WL	WL	Assumed to be LC, as species.
Rhinanthus minor subsp. *monticola*	WL								DD	DD		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Rhinanthus minor subsp. *stenophyllus*	WL								WL	WL	WL	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Rhynchospora alba	LC						LC (G)		LC	NT	LC	
Rhynchospora fusca	NT	A2c				Yes	LC (G)		LC	LC	VU	Decline in Area of Occupancy.
Rorippa amphibia	LC						LC (E,G)		LC	LC	LC	
Rorippa islandica	LC						LC (E,G)	R	LC		LC	Irish plants are referable to subsp. *islandica* (Sell & Murrell 2014). MacGowran (1979) notes the species at three turloughs in Co. Galway. Goodwillie (1995) provides details of new records of the species from turloughs in Cos Clare, Galway, Kilkenny, Mayo and Roscommon (these are mapped in Chater & Rich (1995)), and McNeill & Hackney (1996) from sites in Northern Ireland.
Rorippa palustris	LC						LC (E)		LC	LC	LC	Irish plants are referable to subsp. *palustris* (Sell & Murrell 2014).
Rorippa sylvestris	LC						LC (E,G)		LC	LC	LC	
Rosa agrestis	LC								NT	NT	CR	See O'Mahony (2011) for notes on the Irish distribution of the species.
Rosa arvensis	LC								LC	LC	LC	
Rosa caesia	LC								LC	LC	LC	
Rosa caesia subsp. *caesia*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Rosa caesia subsp. *vosagiaca*	LC								LC	LC	LC	Formerly known as *Rosa caesia* subsp. *glauca*.
Rosa canina	LC								LC	LC	LC	
Rosa micrantha	LC								LC	LC	LC	See O'Mahony (2011) for notes on the Irish distribution of the species.
Rosa mollis	LC								LC	LC	LC	
Rosa obtusifolia	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Rosa rubiginosa	LC								LC	LC	LC	Notes on the Irish distribution of the species and details of Co. Cork sites are provided by O'Mahony (2011).
Rosa sherardii	LC								LC	LC	LC	
Rosa spinosissima	LC								LC	LC	LC	Formerly known as *Rosa pimpinellifolia*.
Rosa stylosa	LC								LC	LC	LC	O'Mahony (2008) provides details of Irish sites and habitats for the species.
Rosa tomentosa	LC								LC	LC	LC	O'Mahony (2003a) reviews the status and distribution of the species in Ireland.
Rubia peregrina	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Rubus caesius	LC								LC	LC	LC	
Rubus chamaemorus	CR	D				Yes	LC (G)	V	LC	LC	NT	Known only from a single site in Co. Tyrone; a survey in 2007 recorded several patches (McNeill 2010).
Rubus fruticosus agg.	LC								LC	LC	LC	All Irish species of *Rubus* subgenus *Rubus* (as defined in Stace (2011)), are included, other than *R. caesius* which is assessed separately.
Rubus hesperius	LC		Yes	Yes								*Rubus hesperius* W.M. Rogers. Irish endemic (Newton & Randall 2004; Sell & Murrell 2014; Stace 2005).
Rubus idaeus	LC								LC	LC	LC	
Rubus saxatilis	LC								LC	LC	LC	
Rumex acetosa	LC								LC	LC	LC	
Rumex acetosa subsp. *acetosa*	LC								LC	LC	LC	
Rumex acetosa subsp. *biformis*	WL								WL	WL		A plant of sea cliffs recorded from at least two Irish sites (sites in Cos Clare and Kerry are noted by Akeroyd (2014)), but likely to be under-recorded (Stroh *et al*. 2015). Populations are morphologically variable, with many plants intermediate or falling closer to subsp. *acetosa* (Akeroyd 2014). Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Rumex acetosa subsp. *hibernicus*	NT	A2c		Yes					LC	DD	DD	Akeroyd (2014), Akeroyd & Curtis (1980), Curtis *et al*. (1981), Rechinger (1961) and Scannell (1982) provide details of the occurrence of this subspecies in Ireland. Decline in Area of Occupancy.
Rumex acetosella	LC								LC	LC	LC	
Rumex acetosella subsp. *acetosella*	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. According to Akeroyd (2014) it appears to be rare in Ireland.
Rumex acetosella subsp. *pyrenaicus*	LC								LC	LC	LC	
Rumex conglomeratus	LC								LC	LC	LC	
Rumex crispus	LC								LC	LC	LC	
Rumex crispus subsp. *crispus*	LC								LC	LC	LC	
Rumex crispus subsp. *littoreus*	LC								LC	LC	LC	
Rumex crispus subsp. *uliginosus*	LC			Yes					LC	LC	VU	Akeroyd (2014) notes that this taxon is probably endemic to north-west Europe, where outside of Ireland and Great Britain it is known only from France (southern Brittany), and that the largest populations are probably those in Cos Clare and Limerick on the tidal reaches of the River Fergus and smaller tributaries of the River Shannon west of Limerick City. It is also locally common in the south-east, particularly along the larger rivers, e.g. the River Barrow, River Slaney and River Suir.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Rumex hydrolapathum	LC						LC (E,G)		LC	LC	LC	
Rumex maritimus	NT	A2c						R	LC	LC	LC	See Smiddy (2016) for details of sites in east Co. Cork. Decline in Area of Occupancy.
Rumex obtusifolius	LC								LC	LC	LC	
Rumex pulcher	VU	D1							LC	LC	EN	See Akeroyd (1993) for details of Irish sites. In Ireland the native status of this species (which is represented by subsp. *pulcher*) is unresolved (Akeroyd *et al*. 2011). It has been treated as having a strong claim to be a native (Akeroyd 1993; Akeroyd *et al*. 1996); however, in Preston *et al*. (2002) it is noted to be alien in Ireland, but naturalised at some sites. Jebb (2014) lists the species as neophyte. Akeroyd (2014) states that "it appears to be a rare native or long-established plant of dry grassland in southern and south-eastern coastal counties" and, for this reason and following the precautionary approach adopted by Leach & Walker (2013) for such taxa of uncertain status, Red List assessment rather than inclusion on the Waiting List is appropriate. Best available information provides a total population estimate of less than 1000 individuals.
Rumex sanguineus	LC								LC	LC	LC	
Ruppia cirrhosa	LC						LC (E,G)		NT	LC	VU	Rarer than *R. maritima*, but easily overlooked and certainly under-recorded. Scannell (1975b) provides details of Irish records.
Ruppia maritima	LC						LC (E,G)		LC	NT	EN	
Sagina apetala	LC								LC	LC	LC	
Sagina filicaulis	LC								LC	LC	LC	Formerly known as *Sagina apetala* subsp. *erecta*. Apparent declines are considered to be due to nomenclatural rather than actual distributional changes.
Sagina maritima	LC								LC	LC	LC	
Sagina nodosa	LC								LC	VU	LC	
Sagina procumbens	LC								LC	LC	LC	
Sagina subulata	LC								LC	NT	LC	
Sagittaria sagittifolia	LC						LC (E,G)		LC	LC	VU	
Salicornia dolichostachya	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. It is considered likely to be under-recorded. Stroh *et al*. (2015) note a revised classification for *Salicornia* spp. that has yet to be applied to Irish populations.
Salicornia emerici	WL								DD	DD	EN	Formerly known as *Salicornia nitens*. Research and surveys are required to clarify the distribution and abundance of this species in Ireland. Stroh *et al*. (2015) note a revised classification for *Salicornia* spp. that has yet to be applied to Irish populations.
Salicornia europaea	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Salicornia fragilis	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. Stroh *et al*. (2015) note a revised classification for *Salicornia* spp. that has yet to be applied to Irish populations.
Salicornia pusilla	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. It is considered likely to be under-recorded. Stroh *et al*. (2015) note a revised classification for *Salicornia* spp. that has yet to be applied to Irish populations.
Salicornia ramosissima	WL								LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. It is noted in Preston *et al*. (2002) that there is much confusion between it and *S. europaea*. Stroh *et al*. (2015) note a revised classification for *Salicornia* spp. that has yet to be applied to Irish populations.
Salix alba	LC						LC (G)		LC	LC	LC	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008).
Salix aurita	LC								LC	LC	LC	
Salix caprea	LC								LC	LC	LC	Irish plants are referable to subsp. *caprea* (Stace 2011).
Salix cinerea	LC						LC (G)		LC	LC	LC	
Salix cinerea subsp. *cinerea*	WL								LC	LC	LC	Kelly (1985) provides details of records (backed up by expertly-determined specimens) from four sites in Ireland for the subspecies. Since this time, however, the distribution of the taxon has been much confounded by over-recording and by mis-referral of records identified to species level to this, the type subspecies, rather than to the ubiquitous subsp. *oleifolia*. Some authors have queried its occurrence in Ireland – see Forbes & Northridge (2012) for details. As such, research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Salix cinerea subsp. *oleifolia*	LC								LC	LC	LC	
Salix euxina	WL											Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. *S. euxina* comprises part of what was formerly known as *S. fragilis* (Crack Willow) and covers plants previously referred to *S. fragilis* var. *decipiens*. Plants identified as *S. fragilis* var. *fragilis*, var. *furcata* and var. *russelliana* are referred to *S.* x *fragilis*, the hybrid between *S. euxina* and *S. alba*. See Stace (2011; 2012) and Stace *et al*. (2015) for further details. Crack Willow is a long-term introduction in Ireland – *S. fragilis* is listed as an archaeophyte by Jebb (2014) and Williamson *et al*. (2008).
Salix herbacea	NT	A2c							LC	LC	NT	Decline in Area of Occupancy.
Salix myrsinifolia	LC								LC	LC		Formerly known as *S. nigricans*. See Harron (1992), Riley (1998) and Synnott (1983) for notes on the status of and sites for the species in Ireland.
Salix pentandra	LC								LC	LC	WL	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Salix phylicifolia	EN	D						R	LC	LC		The status of the species in Ireland is reviewed by Synnott (1983) and recent records are in Cotton & Cawley (1993). The latest counts from known Irish sites (Cos Leitrim and Sligo) indicate a population of between 50 and 250 individuals. A record from Co. Fermanagh is considered by Northridge *et al*. (2014) to be "almost certainly an error." Plants from Co. Antrim referred to "*S. phylicifolia sensu lato*" are considered to be neophyte in origin (Beesley 2006).
Salix repens	LC								LC	NT	LC	
Salix triandra	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Salix viminalis	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Salsola kali	LC								VU	LC	LC	The sole native subspecies in Ireland is subsp. *kali* (Stace 2011).
Salvia verbenaca	LC							R	LC	NT	LC	Irish plants are referable to subsp. *horminoides* (Stace 2011). A rare species in Ireland found in vulnerable habitats and, as such, regular monitoring of sites is merited.
Sambucus ebulus	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Sambucus nigra	LC								LC	LC	LC	
Samolus valerandi	LC						LC (E,G)		LC	LC	LC	
Sanguisorba officinalis	VU	D1			Yes	Yes	LC (G)	V	LC	LC	LC	Recent surveys of known sites in Cos Antrim, Down, Limerick and Mayo provide a total population estimate of less than 1000 individuals.
Sanicula europaea	LC								LC	NT	LC	
Saponaria officinalis	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Sarcocornia perennis	VU	D1			Yes			V	LC	LC	VU	Formerly known as *Arthrocnemum perenne*, *Arthrocnemon perenne, Salicornia perennis*. See Ferguson (1962; 1964) for details of the discovery of this species in Ireland. Restricted to salt marsh habitats in Co. Wexford. Recent surveys indicate a total population of less than 1000 individuals.
Saussurea alpina	VU	D1				Yes		R	LC	VU	EN	Recent surveys provide a total population estimate of less than 1000 individuals.
Saxifraga aizoides	LC					Yes		R	LC	LC		
Saxifraga granulata	RE				Yes			EN	LC	LC	LC	Native or alien (Jebb 2014). Irish plants are referable to subsp. *granulata* (Sell & Murrell 2014). The last Irish records for this species as a native were from Co. Wicklow in 1985 and Co. Dublin in 1986. Despite repeated searches of these sites specifically for the species it has not been refound and is considered to be RE.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Saxifraga hirculus	NT	A2c; B2ab(i)			Yes		DD (E) LC (G)	EN	VU	LC		Irish plants are referable to subsp. *hirculus* (Sell & Murrell 2014). Lockhart (1989) describes the discovery, ecology and abundance of the species at three localities in Co. Mayo. Listed on Annex II of the E.U. Habitats Directive – see Muldoon *et al*. (2015) and NPWS (2013c) for a review of its conservation status in the Republic of Ireland and for relevant references. Decline in Area of Occupancy and Extent of Occurrence.
Saxifraga hirsuta	LC										NA	Irish plants are referable to subsp. *hirsuta* (Sell & Murrell 2014).
Saxifraga hypnoides	LC								VU	LC	LC	
Saxifraga nivalis	CR	D			Yes			R	LC	CR	EN	Known from a single site on limestone cliffs in Co. Sligo. Twenty-one plants recorded in 2011–2012.
Saxifraga oppositifolia	LC					Yes		R	LC	LC	LC	
Saxifraga rosacea	NT	A2c							EW		EW	Extinct in the wild in Great Britain (Wales), but wild-collected material (of subsp. *rosacea*) is in cultivation (Cheffings & Farrell 2005; Dines 2008). Decline in Area of Occupancy.
Saxifraga rosacea subsp. *hartii*	VU	D2	Yes	Yes	Yes			R				Formerly known as *Saxifraga hartii*. Irish endemic (Stace 2005; Webb & Gornall 1989). Known only from sea cliffs on Aran Island/Aranmore (Árainn Mhór), Co. Donegal.
Saxifraga rosacea subsp. *rosacea*	NT	A2c							EW		EW	Decline in Area of Occupancy.
Saxifraga spathularis	LC			Yes							NA	
Saxifraga stellaris	LC								LC	LC	LC	
Saxifraga tridactylites	LC								LC	LC	LC	
Scandix pecten-veneris	RE							EX	CR	EN	CR	Archaeophyte (Jebb 2014); not now or never has been found in Ireland (Williamson *et al.* 2008). Since 1970 there has been only one record for this species that was not obviously derived from neophyte stock, from Murlough Bay, Co. Antrim in 1972 by an unknown recorder (see Beesley 2006). While evidence that the species has been looked for here has not been located (other than Beesley's (2006) view that the species was "very rare if not extinct" in Co. Antrim and possibly Ireland), it is highly unlikely that there has been no search of the site for this iconic species since 1972; it is presumed therefore that, like the many other recorded sites for the species, it has now been lost from here also. Hackney (1992) lists no records from the north-east after 1966 and considers the species to be apparently extinct there. Curtis & McGough (1988) consider the species likely to be extinct in Ireland. It should be borne in mind that the species is likely to appear here and there as a result of sowing of grass and wildflower seed-mixes, as it did in Co. Waterford where Green (2008a) recorded a single plant on a newly-sown verge.
Schedonorus arundinaceus	LC								LC	LC	LC	Formerly known as *Festuca arundinacea*.
Schedonorus giganteus	LC								LC	LC	LC	Formerly known as *Festuca gigantea*.
Schedonorus pratensis	LC								LC	LC	LC	Formerly known as *Festuca pratensis*.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Scheuchzeria palustris	RE						LC (G)	EX	LC	RE		Moore (1952; 1955) records the discovery of this species in Ireland in 1951 and describes its distribution and ecology on a raised bog in Co. Offaly. Curtis & McGough (1988) chronicle the discovery, attempted rescue translocation (Moore 1959) and subsequent extinction (last record in 1960) of the species.
Schoenoplectus lacustris	LC						LC (E,G)		LC	LC	LC	Formerly known as *Scirpus lacustris* subsp. *lacustris*.
Schoenoplectus tabernaemontani	LC						LC (E,G)		LC	LC	LC	Formerly known as *Scirpus lacustris* subsp. *tabernaemontani*.
Schoenoplectus triqueter	NT	A2c+3c			Yes		LC (E,G)	V	CR	CR		Formerly known as *Scirpus triqueter*. In Ireland this species is known only from the banks of the River Shannon and a number of its tributaries at and downstream of Limerick City. It formerly occurred on the tidal portion of the River Cashen, Co. Kerry (last seen in 1905, never refound). Its distribution and ecology in Ireland is set out by Deegan & Harrington (2004) and Rich & FitzGerald (2002). There have been recent losses and future population reduction is suspected. The future prospects for its main habitats are assessed as unfavourable (NPWS 2013a; 2013b).
Schoenus nigricans	LC						LC (G)		LC	LC	LC	
Scilla verna	LC								LC	LC	LC	
Scirpus sylvaticus	NT	A2c					LC (E,G)		LC	LC	LC	Decline in Area of Occupancy.
Scleranthus annuus	VU	A2c; B2ab(ii,iv)			Yes				EN	EN	LC	Irish plants are referable to subsp. *annuus* (Stace 2011). Archaeophyte or neophyte (Jebb 2014). This species is rare and declining, and its habitat is threatened. While its status is uncertain, rather than placing the species on the Waiting List a Red List assessment is made, following the precautionary approach adopted by Leach & Walker (2013) in such cases.
Scorzoneroides autumnalis	LC								LC	LC	LC	Formerly known as *Leontodon autumnalis*.
Scrophularia auriculata	LC								LC	LC	LC	
Scrophularia nodosa	LC								LC	LC	LC	
Scrophularia umbrosa	NT	A3c				Yes	LC (G)	V	LC	LC	NA	Details of Irish sites are in Curtis & McGough (1988), Doogue *et al*. (1998), Faulkner (2015), Forbes & Northridge (2012), Hackney (1992), Northridge *et al*. (2014), Praeger (1932) and Reynolds (2013). Although mapped as native in Preston *et al*. (2002) it is suggested there that it may be a relatively recent colonist both in Ireland and Great Britain, and Forbes & Northridge (2012) consider it to be a modern introduction. It is, however, listed as native in Cheffings & Farrell (2005), Jebb (2014), Parnell & Curtis (2012), Scannell & Synnott (1987), Stace (2011) and Stroh *et al*. (2014). Sites for the species are on the margins of rivers and lakes and are particularly vulnerable to interference and damage; future population reduction suspected.
Scutellaria galericulata	LC						LC (G)		LC	LC	LC	
Scutellaria minor	LC								LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Sedum acre	LC								LC	LC	LC	
Sedum anglicum	LC								LC	LC	LC	
Sedum rosea	LC								LC	LC	LC	
Selaginella selaginoides	LC								LC	LC	LC	
Senecio aquaticus	LC						LC (G)		LC	NT	LC	Irish plants are referable to subsp. *aquaticus* (Stace 2011).
Senecio erucifolius	LC								LC	LC	LC	
Senecio jacobaea	LC								LC	LC	LC	
Senecio jacobaea subsp. *dunensis*	LC			Poss					WL			See Wyse Jackson (2002) for details of its Irish distribution and sites.
Senecio jacobaea subsp. *jacobaea*	LC								LC			Assumed to be LC, as species.
Senecio sylvaticus	LC								LC	LC	LC	
Senecio vulgaris	LC								LC	LC	LC	Irish plants are referable to subsp. *vulgaris* (Stace 2011).
Serratula tinctoria	RE								LC	LC	LC	Known only from a single site near New Ross, Co. Wexford where it was last recorded by D.A.Webb in 1952. Intensive searches since (in 1973, 1983 and 1990) have failed to relocate the species and it is considered to be RE. Listed as native in Scannell & Synnott (1987) and Webb (1977), introduced in Parnell & Curtis (2012) and native or alien in Jebb (2014).
Sesleria caerulea	LC								LC	LC	RE	Irish plants are referable to subsp. *calcarea* (Čelak.) Hegi (Sell & Murrell 1996).
Sherardia arvensis	LC								LC	LC	LC	
Sibthorpia europaea	LC							R	LC	LC	LC	
Silene acaulis	LC					Yes		R	LC	VU	VU	Although a rare species in Ireland, it is not declining across its range and is abundant at some sites. Assessment of LC is appropriate, but regular monitoring of populations is recommended, particularly in the light of future global climatic changes.
Silene dioica	LC								LC	LC	LC	
Silene flos-cuculi	LC								LC	NT	LC	Formerly known as *Lychnis flos-cuculi*.
Silene gallica	VU	A2c; B2ab(i)							EN	EN	VU	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Area of Occupancy and Extent of Occurrence.
Silene latifolia	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Irish plants are referable to subsp. *alba* (Stace 2011).
Silene uniflora	LC								LC	LC	LC	
Silene vulgaris	LC						LC (G)		LC	LC	NT	Irish plants are referable to subsp. *vulgaris* (Stace 2011).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Silybum marianum	NT	A2c							LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Area of Occupancy.
Simethis mattiazzii	NT	A3c			Yes			V				Formerly known as *Simethis planifolia*. Restricted to Co. Kerry (see Wyse Jackson (1984)) and a single site in Co. Cork (see Scannell & O'Donnell (1994)). Pearman & Edgington (2016) review early records for the species from Great Britain and Ireland. Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Sinapis alba	LC						LC (E)		LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al*. 2008). Irish plants are referable to subsp. *alba* (Stace 2011).
Sinapis arvensis	LC						LC (E)		LC	LC	VU	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Sisymbrium officinale	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Sisyrinchium bermudiana	LC			Yes		Yes		NT			NA	
Sium latifolium	LC						LC (E)		EN	EN	NA	
Smyrnium olusatrum	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Solanum dulcamara	LC								LC	LC	LC	
Solanum nigrum	LC								LC	LC	LC	Archaeophyte (Jebb 2014). Irish plants are referable to subsp. *nigrum* (Stace 2011).
Solidago virgaurea	LC								LC	NT	LC	Subsp. *virgaurea* occurs throughout the range of the species (Sell & Murrell 2006). The possible occurrence of subsp. *minuta* in Ireland requires investigation; Webb & Scannell (1983) note the presence of dwarf forms in the mountains and on limestone pavement in the Burren, Co. Clare.
Sonchus arvensis	LC								LC	LC	LC	Irish plants are referable to subsp. *arvensis* (Sell & Murrell 2006).
Sonchus asper	LC								LC	LC	LC	Irish plants are referable to subsp. *asper* (Sell & Murrell 2006).
Sonchus oleraceus	LC								LC	LC	LC	
Sorbus anglica	EN	D					VU (G)		NT	VU	LC	In Ireland this species is known to occur only around the Killarney lakes, Co. Kerry. Rich *et al*. (2010c; 2013b) provide details of the occurrence and status of the species in Ireland and record the total Irish population as being in excess of 90 plants. The global population of the species is noted to be "probably over 1000 trees" (Rich *et al*. 2010c) and, on this basis, the assessment of VU D1 in IUCN (2016b) requires updating.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Sorbus aria	LC								LC	LC	LC	Irish plants are referable to subsp. *aria* (Rich *et al*. 2010c). There are many more records for this species from Ireland than are mapped in Preston *et al*. (2002) – see map in Rich *et al*. (2010c). It is considered to be an alien at most of the Irish sites mapped in Preston *et al*. (2002), but there are two hectads (in Cos Galway and Mayo) where it is mapped as native. Its status in Co. Galway has been much discussed over the years – see, for example, Rich *et al*. (2010c) and Webb & Scannell (1983). Jebb (2014) lists the species as native, as do Parnell & Curtis (2012) who note it to be "Rare as a native but locally frequent in Co. Galway, scattered as an obvious introduction elsewhere." There is, of course, the possibility that at some of its sites it is a long-established (archaeophyte) introduction. Information on morphological variation in Irish material of this and other *Sorbus* species is provided by Parnell & Needham (1998).
Sorbus aucuparia	LC								LC	LC	LC	Irish plants are referable to subsp. *aucuparia* (Sell & Murrell 2014).
Sorbus devoniensis	EN	D							LC	LC	NA	Cann & Rich (2006) and Rich *et al*. (2010c) provide details of the occurrence and status of the species in Ireland. A 2006 survey of the species in Cos Carlow, Kilkenny, Waterford and Wexford recorded 90 trees in 13 sites and in Cos Derry, Down and Tyrone, *c*. 30 trees in five sites – the species is considered by Rich *et al*. (2010c) to be "probably native" in the south and "probably introduced" in the north. Recent surveys show the species to be declining both in terms of numbers of sites and individuals.
Sorbus hibernica	VU	D1	Yes	Yes								Irish endemic (Rich *et al*. 2010c; Stace 2005). Recent surveys of the species suggest a population size of less than 1000 individuals – see Rich *et al*. (2005; 2010c). An unnamed *Sorbus* taxon from north Wales (the Menai Strait) is considered to be morphologically indistinguishable from *S. hibernica* (Cowan *et al*. 2008; Rich *et al*. 2010c); however, pending further studies, this and *S. hibernica* are treated as separate taxa in Rich *et al*. (2010c) on the basis of their different chromosome numbers (*S. hibernica* is triploid with 2n=51 and the Welsh plant tetraploid with 2n=68), their likely different origins and because they are not genetically identical, albeit similar.
Sorbus rupicola	VU	A2c; B2ab(i); D1							LC	LC	VU	Rich *et al*. (2010c) provide details of the occurrence and status of the species in Ireland. Declines in Area of Occupancy and Extent of Occurrence. Best available information provides a total population estimate of less than 1000 individuals.
Sorbus scannelliana	CR	D	Yes	Yes								Irish endemic (Rich *et al*. 2010c; Stace 2011), described as a new species in Rich & Proctor (2009). Additional details are in Rich *et al*. (2013b). The species is known from a single site in woodland on limestone by Lough Leane, Co. Kerry where the total population comprises five individuals (recorded regularly between 2008 and 2014), of which one is an adult tree and the other four are saplings. Protection and management of the site by Killarney National Park staff has prevented grazing of the saplings by deer, and encouraged flowering and fruiting.
Sparganium angustifolium	LC						LC (E,G)		LC	LC	LC	
Sparganium emersum	LC						LC (E,G)		LC	LC	LC	
Sparganium erectum	LC						LC (E,G)		LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Sparganium erectum subsp. *erectum*	WL								WL		WL	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Sparganium erectum subsp. *microcarpum*	LC								WL		WL	
Sparganium erectum subsp. *neglectum*	LC								LC		WL	
Sparganium erectum subsp. *oocarpum*	WL								WL		WL	Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland.
Sparganium natans	NT	A2c					NT (E) LC (G)		LC	VU	LC	Formerly known as *Sparganium minimum*. A plant of lakes, pools, slowly-moving streams and ditches, it has declined in Ireland and in Great Britain (Preston & Croft 1997; Preston *et al*. 2002). Parnell & Curtis (2012) note its occurrence in Ireland as "formerly frequent, now occasional".
Spergula arvensis	LC								VU	VU	NT	Archaeophyte (Jebb 2014).
Spergularia marina	LC						LC (G)		LC	LC	LC	
Spergularia media	LC						LC (G)		LC	LC	LC	
Spergularia rubra	LC								LC	LC	LC	
Spergularia rupicola	LC			Yes					LC	LC	LC	
Spiranthes romanzoffiana	NT	A2c		Yes	Yes	Yes	NT (E)	R	LC	RE		Horsman (2005) provides details of sites in Cos Cork, Galway, Kerry and Mayo; it also occurs in Cos Donegal, Fermanagh, Leitrim and Roscommon, and about Lough Neagh, and is more widespread than was formerly recorded. However, the habitat of the species (most of the sites are on lakeshores) is particularly vulnerable to changes in land use, agricultural improvement, reclamation, overgrazing/trampling, etc. and there have been recent losses. Decline in Area of Occupancy. A significant proportion of the European population is found in Ireland. See https://www.npws.ie/sites/default/files/publications/pdf/2005_Group_SAP.pdf for further details.
Spiranthes spiralis	NT	A2c+3c					LC (E)		NT	NT	LC	Declines associated with changes in landuse practices. It occurs mainly in habitats that are listed on Annex I of the E.U. Habitats Directive (orchid-rich calcareous grasslands, limestone pavements, fixed dunes, coastal cliff tops); the latest assessements of the status of these in the Republic of Ireland (NPWS 2013a; 2013b) are unfavourable, and future population reduction is suspected. Cotton & Dunleavy (2009) provide details of populations in Co. Sligo and discuss the various damaging activities that have affected them.
Spirodela polyrhiza	LC						LC (G)		LC	LC	LC	
Stachys arvensis	LC								NT	NT	VU	Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Stachys palustris	LC						LC (G)		LC	LC	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Stachys sylvatica	LC								LC	LC	LC	
Stellaria alsine	LC								LC	LC	LC	Formerly known as *Stellaria uliginosa*.
Stellaria graminea	LC								LC	LC	LC	
Stellaria holostea	LC								LC	LC	LC	
Stellaria media	LC								LC	LC	LC	
Stellaria neglecta	WL								LC	LC	LC	Jebb (2014) lists the occurrence of this species in Ireland as "error? = Probable errors". A review of records and specimens along with research and surveys are required to clarify the occurrence, distribution, abundance and conservation status of this species in Ireland.
Stellaria pallida	LC								LC	LC	LC	Formerly known as *Stellaria apetala*.
Stellaria palustris	LC								VU	VU	VU	
Stratiotes aloides	LC						LC (E,G)		LC	LC	NA	Forbes (2000) argues for its native status in Co. Fermanagh, and possibly elsewhere in Ireland. It is listed as native in Forbes & Northridge (2012) and neophyte in Jebb (2014).
Suaeda maritima	LC								LC	LC	LC	
Subularia aquatica	VU	B2ab(i)					LC (E,G)		LC	VU	EN	Irish plants are referable to subsp. *aquatica* (Sell & Murrell 2014). Decline in Extent of Occurrence.
Succisa pratensis	LC								LC	NT	LC	
Symphytum officinale	LC								LC	LC	LC	Native, with small original range, now widespread (Jebb 2014).
Tanacetum parthenium	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Tanacetum vulgare	LC								LC	LC	LC	Archaeophyte (Jebb 2014).
Taraxacum agg.	LC								LC	LC	LC	The assessment includes all Irish *Taraxacum* species.
Taraxacum amarellum	WL		Yes	Yes								*Taraxacum amarellum* Kirschner & Štěpánek. Irish endemic (Kirschner & Štěpánek 1998; Sell & Murrell 2006; Stace 2005). Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Taraxacum webbii	WL		Yes	Yes								*Taraxacum webbii* A.J. Richards. Irish endemic (Sell & Murrell 2006; Stace 2005). See Dudman & Richards (1997) and Richards (1981) for details; named in honour of Professor David Allardice Webb, who collected the holotype specimen in 1972. Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Taxus baccata	LC						LC (G)		LC	LC	LC	
Teesdalia nudicaulis	EN	B2ab(ii,iv)				Yes		R	NT	NT	LC	Currently known from only two locations in Ireland, on sand dunes in Cos Derry and Down. The species has been lost from several sites in these counties, as well as from Co. Tyrone, where it was last recorded in 1944 (McNeill 2010).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Teucrium scordium	LC						LC (E)		EN	EN	WL	
Teucrium scorodonia	LC								LC	LC	LC	
Thalictrum alpinum	LC					Yes			LC	LC	LC	
Thalictrum flavum	LC								LC	LC	LC	
Thalictrum minus	LC								LC	LC	LC	Irish plants are referable to subsp. *saxatile* (Stace 2011), including the distinctive plant of coastal sites previously referred to subsp. *arenarium*.
Thelypteris palustris	NT	A2c					LC (G)		LC	LC	LC	Decline in Area of Occupancy.
Thlaspi arvense	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Thymus polytrichus	LC								LC	LC	LC	Irish plants are referable to subsp. *britannicus* (Stace 2011).
Thymus pulegioides	WL								LC	LC	LC	The presence of this species in Ireland as a native or, indeed, at all is in doubt. Jebb (2014) lists the occurrence of this species in Ireland as "error? = Probable errors". Two records for the species from Co. Armagh are discounted by Faulkner (2015) as erroneous or doubtful while those from Co. Fermanagh are also discounted for the same reasons – they are not mentioned in Forbes & Northridge (2012) or Northridge *et al.* (2014). Forbes & Northridge (2012) state that nowadays *T. polytrichus* is regarded as the only native Wild Thyme in Ireland. However, the species has been recorded from Cos Cavan and Cork and these records are backed up by expertly-determined specimens. Whether or not these were based on casual occurrences of the species, as suggested by Webb *et al.* (1996) who note the species to be certainly introduced and comment that it "has been recorded as a casual in the past", is unclear. Reilly (2001) lists the species as native in Co. Cavan and Stace (2011) considers it to be perhaps introduced in Ireland. Research and surveys are required to clarify the occurrence, distribution, abundance and conservation status of this species in Ireland.
Torilis japonica	LC								LC	LC	LC	
Torilis nodosa	NT	A2c							LC	LC	LC	Decline in Area of Occupancy.
Tragopogon pratensis	LC								LC	LC	LC	The sole native subspecies in Ireland is subsp. *minor* (Stace 2011).
Trichomanes speciosum	LC[1]			Yes[2]	Yes		LC (E,G)	R[3]	LC	LC	LC[4]	*Vandenboschia speciosa* (synonym). Listed on Annex II of the E.U. Habitats Directive – see Ní Dhúill *et al.* (2015) and NPWS (2013c) for a review of its conservation status in the Republic of Ireland and for relevant references. The habitats and ecology of the sporophyte generation of the species are described in detail by Ratcliffe *et al.* (1993), based on their field surveys of thirty Irish colonies and thirteen colonies from Great Britain. The distribution and ecology of the gametophyte generation in Ireland are detailed in Kingston & Hayes (2005) and Rumsey *et al.* (1998). Northridge & Northridge (2007) review the state of knowledge of the sporophyte and gametophyte generations of the species in Northern Ireland. [1]Separate assessments for sporophyte, gametophyte and both generations combined are all LC; [2]sporophyte only; [3]sporophyte only; [4]sporophyte assessed as VU.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Trichophorum cespitosum	LC						LC (G)[1]		DD	DD	LC	Formerly known as *Scirpus cespitosus, Tricophorum cespitosum* subsp. *cespitosum*. Rarer that *T. germanicum*, but considered likely to also be under-recorded. [1]IUCN (2016b) assessment for *T. caespitosum*.
Trichophorum germanicum	LC								LC	LC	LC	Formerly known as *Scirpus cespitosus, Tricophorum cespitosum* subsp. *germanicum*.
Trifolium arvense	LC						LC (E)		LC	LC	LC	
Trifolium campestre	LC								LC	LC	LC	
Trifolium dubium	LC								LC	LC	LC	
Trifolium fragiferum	LC								LC	VU	LC	Irish plants are referable to subsp. *fragiferum* (Stace 2011).
Trifolium glomeratum	EN	B2ab(iii,v)			Yes			V	LC	LC	NA	Recorded from only three sites in Ireland between 1987 and 2014, in Cos Waterford and Wexford. At two of the sites the numbers of individuals present have declined (Green 2006); the third, and largest, population was recorded in 2010 from a second site in Co. Wexford (Green 2011). The species was recorded from Co. Wicklow in the 1920s (Brunker 1950) but not since.
Trifolium medium	LC								LC	LC	LC	Irish plants are referable to subsp. *medium*.
Trifolium micranthum	LC								LC	LC	LC	
Trifolium occidentale	LC								LC	LC	LC	See Preston (1980) and Akeroyd (1983) for details of the discovery of and sites for the species in Ireland.
Trifolium ornithopodioides	LC								LC	LC	LC	
Trifolium pratense	LC						LC (E,G)		LC	LC	LC	
Trifolium repens	LC						LC (E)		LC	LC	LC	
Trifolium scabrum	NT	A3c					LC (G)		LC	LC	LC	Future population reduction suspected, on the basis of ongoing threats to its habitat.
Trifolium striatum	LC								LC	LC	LC	
Trifolium subterraneum	VU	A3c; D1			Yes		LC (E,G)	V	LC	LC	LC	Surveys between 2007 and 2014 provide a total population estimate of less than 1000 individuals occurring in two sites in Co. Wexford and one in Co. Wicklow. Green (2011) provides details of the first record from Co. Wexford. Two other sites for the species in Co. Wicklow have not been recorded since 1987 and the species is considered to be extinct at these. All of its recorded sites are highly vulnerable to future landuse changes.
Triglochin maritima	LC						LC (G)		LC	LC	LC	
Triglochin palustris	LC						LC (G)		LC	NT	LC	
Tripleurospermum inodorum	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Tripleurospermum maritimum	LC								LC	LC	LC	Irish plants are referable to subsp. *maritimum* (Stace 2011). The possible occurrence of subsp. *nigriceps* and/or subsp. *vinicaule* requires investigation.
Trisetum flavescens	LC								LC	LC	LC	The sole native subspecies in Ireland is subsp. *flavescens* (Stace 2011).
Trollius europaeus	NT	A3c			Yes	Yes		V	LC	LC	LC	Future population reduction suspected; all of the sites for the species are on the margins of lakes and rivers, and are particularly vulnerable to interference and damage.
Tuberaria guttata	LC							R	NT		LC	Irish plants are referable to subsp. *brewerí* (Stace 2011). Data from recent surveys shows the total population to number well over 1000 individuals.
Tussilago farfara	LC								LC	LC	LC	
Typha angustifolia	LC						LC (E,G)		LC	LC	LC	
Typha latifolia	LC						LC (E,G)		LC	LC	LC	
Ulex europaeus	LC						LC (G)		LC	LC	LC	
Ulex gallii	LC								LC	LC	LC	
Ulmus glabra	LC								LC	LC	LC	Native Irish plants are referable to subsp. *montana* (Stace 2011). The possible presence of subsp. *glabra*, perhaps introduced with planted stock, requires investigation.
Ulmus procera	LC								LC	LC	LC	Archaeophyte (Jebb 2014). Although Dutch Elm Disease has led to many losses the species is still widespread in Ireland and present in a large number of sites, often in abundance, and an assessment of LC is appropriate.
Umbilicus rupestris	LC								LC	LC	LC	
Urtica dioica	LC						LC (E,G)		LC	LC	LC	
Urtica dioica subsp. *dioica*	LC								LC	LC		Assumed to be LC, as species.
Urtica dioica subsp. *galeopsifolia*	LC								WL	WL		See Taylor (2009) for details of this taxon.
Urtica urens	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Utricularia australis	LC						LC (E,G)		LC	LC	LC	
Utricularia intermedia	WL						DD (E) LC (G)		DD	DD	VU	Noted by Stace (2011) to be much over-recorded for *U. ochroleuca* and perhaps *U. stygia*. Stroh *et al.* (2015) state that this species is "apparently very rare" in Great Britain and Ireland. Research and surveys are required to clarify the distribution, abundance and conservation status of these three species in Ireland. See Doyle & Parnell (2003) for a study of "quadrifid hairs" and their usefulness for distinguishing Irish *Utricularia* taxa.
Utricularia minor	LC						LC (E,G)		LC	VU	LC	

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Utricularia ochroleuca	WL						DD (E) LC (G)		DD	DD		Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Utricularia stygia	WL						DD (E)		DD	DD		Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland.
Utricularia vulgaris	WL						LC (E,G)		LC	LC	LC	Research and surveys are required to clarify the distribution, abundance and conservation status of this species in Ireland. Preston & Croft (1997) consider it to be under-recorded, but also that some sites have been lost to habitat destruction and eutrophication.
Vaccinium myrtillus	LC								LC	LC	LC	
Vaccinium oxycoccos	LC						LC (G)		LC	LC	LC	
Vaccinium vitis-idaea	LC						LC (G)		LC	LC	LC	
Valeriana officinalis	LC								LC	NT	LC	Irish plants are referable to subsp. *sambucifolia* (Stace 2011).
Valerianella dentata	VU	A2c; B2ab(i,iii)							EN	EN	EN	Archaeophyte (Jebb 2014); neophyte (Williamson *et al.* 2008). Decline in Extent of Occurrence.
Valerianella locusta	LC								LC	LC	LC	Both var. *locusta* and var. *dunensis* occur; these are treated as subspecies by some authors, e.g. Sell & Murrell (2006).
Valerianella rimosa	CR	A2c; B2ab(i,ii,iv,v); D							EN	EN	CR	Archaeophyte (Jebb 2014); not now or never has been found in Ireland (Williamson *et al.* 2008). This species has declined significantly and was recorded only once between 1987 and 2014 – one plant noted in 2010 amongst a crop of beans in Co. Wexford (Green 2011).
Verbascum thapsus	LC								LC	LC	LC	Native, with small original range, now widespread (Jebb 2014).
Verbena officinalis	NT	A2c							LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008). Decline in Area of Occupancy.
Veronica agrestis	NT	A2c+3c							LC	LC	LC	Archaeophyte or neophyte (Jebb 2014); archaeophyte (Williamson *et al*. 2008). Despite its uncertain status, assessment is appropriate, following the precautionary approach adopted by Leach & Walker (2013). The species is widespread in Ireland, but has declined, largely due to changing agricultural practices. Decline in Area of Occupancy; future population reduction suspected.
Veronica anagallis-aquatica	LC						LC (E,G)		LC	LC	LC	Irish plants are referable to subsp. *anagallis-aquatica* (Sell & Murrell 2009).
Veronica arvensis	LC								LC	LC	LC	
Veronica beccabunga	LC						LC (E,G)		LC	LC	LC	
Veronica catenata	LC						LC (E,G)		LC	LC	LC	
Veronica chamaedrys	LC								LC	LC	LC	
Veronica hederifolia	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Veronica hederifolia subsp. *hederifolia*	LC								LC	LC	LC	Archaeophyte (Jebb 2014).
Veronica hederifolia subsp. *lucorum*	LC								LC	LC	LC	British archaeophyte that could be native in Ireland (Jebb 2014); archaeophyte (Williamson *et al.* 2008).
Veronica montana	LC								LC	LC	LC	
Veronica officinalis	LC								LC	NT	LC	
Veronica polita	LC											Archaeophyte or neophyte (Jebb 2014). Despite its uncertain status, assessment is appropriate, following the precautionary approach adopted by Leach & Walker (2013). Although this species has shown declines it is still widespread in Ireland, present in a large number of sites, often in abundance, and would also appear to be somewhat under-recorded. An assessment of LC is appropriate.
Veronica scutellata	LC						LC (E,G)		LC	NT	LC	
Veronica serpyllifolia	LC						LC (G)		LC	LC	LC	Irish plants are referable to subsp. *serpyllifolia* (Sell & Murrell 2009; Stace 2011).
Viburnum opulus	LC								LC	LC	LC	
Vicia cracca	LC								LC	LC	LC	
Vicia hirsuta	LC								LC	LC	LC	
Vicia lathyroides	LC						LC (E)	R	LC	LC	LC	
Vicia orobus	VU	A2c; D1			Yes	Yes	LC (G)	V	NT	VU	LC	Roden (1995) provides details of Irish sites. The main habitat for the species, lowland calcareous heath, is highly threatened by agricultural improvement/land reclamation and, in recent years, populations of the species and areas of suitable habitat have been lost to these and other activities. Recent surveys provide a total population estimate of less than 1000 individuals.
Vicia sativa	LC						LC (E)		LC	LC	LC	The sole native subspecies in Ireland is subsp. *nigra* (Jebb 2014); subsp. *sativa* and subsp. *segetalis* are listed as archaeophytes by Williamson *et al.* (2008), but not by Jebb (2014) who considers subsp. *sativa* to have been recorded in error and subsp. *segatilis* to be neophyte.
Vicia sepium	LC						LC (E)		LC	LC	LC	
Vicia sylvatica	LC								LC	LC	LC	
Viola arvensis	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Viola canina	LC								NT	VU	LC	Irish plants are referable to subsp. *canina* (Stace 2011).
Viola hirta	VU	A3c			Yes			V	LC	LC	LC	The habitat of the species, species-rich limestone grassland, is highly vulnerable to future changes in landuse; grassland improvement and reclamation works have already led to the loss of some recently recorded sites and these activities are ongoing threats to the species. Future population reduction suspected.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Viola lactea	VU	A2c			Yes			V	VU	EN	LC	Decline in Area of Occupancy.
Viola lutea	VU	A2c+3c; B2ab(iii)							LC	NT	LC	Declines in Area of Occupancy, extent and quality of habitat. Continuation of declines into the future due to improvement/reclamation of grasslands is considered likely. Future population reduction suspected.
Viola odorata	LC								LC	LC	LC	Native, with small original range, now widespread (Jebb 2014).
Viola palustris	LC						LC (G)		LC	LC	LC	
Viola palustris subsp. *juressi*	LC			Poss					LC	LC	LC	
Viola palustris subsp. *palustris*	LC								LC	LC	LC	
Viola persicifolia	NT	A3c				Yes		R	CR	CR		Pullin (1986) summarises work undertaken on the distribution and ecology of this species in Cos Clare and Galway. Future population reduction suspected; the future prospects for its main habitat are assessed as unfavourable (NPWS 2013a; 2013b).
Viola reichenbachiana	LC								LC	LC	LC	
Viola riviniana	LC								LC	LC	LC	
Viola tricolor	LC								NT	NT	VU	
Viola tricolor subsp. *curtisii*	LC			Poss					LC	NT	LC	
Viola tricolor subsp. *tricolor*	LC								NT	NT	VU	Native or alien (Jebb 2014).
Vulpia bromoides	LC								LC	LC	LC	
Vulpia fasciculata	LC								LC	LC	LC	
Vulpia myuros	LC								LC	LC	LC	Archaeophyte (Jebb 2014; Williamson *et al.* 2008).
Wahlenbergia hederacea	NT	A2c+3c							NT	NT	LC	Decline in Area of Occupancy; future population reduction suspected.
Zannichellia palustris	LC						LC (E,G)		LC	LC	LC	
Zannichellia palustris subsp. *palustris*	WL								WL	WL		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Its occurrence in Lough Neagh in Co. Antrim, intermingled with subsp. *pedicellata*, is noted by Hackney (1992), however, its overall distribution is unknown (Stace 2011).
Zannichellia palustris subsp. *pedicellata*	WL								WL	WL		Research and surveys are required to clarify the distribution, abundance and conservation status of this subspecies in Ireland. Its occurrence in Lough Neagh in Co. Antrim, intermingled with subsp. *palustris*, and in Lough Beg, Co. Derry is noted by Hackney (1992), however, its overall distribution is unknown (Stace 2011).
Zostera marina	LC						LC (G)		NT	VU	LC	Includes *Zostera angustifolia* (Stace 2011). Madden *et al*. (1993) provide details of the distribution and ecology of the species in Co. Dublin.

Taxon Name	Irl RL Category	Criteria	Irl End	Int Sig	FPO 2015	Schd 8 NI	Eur/Glob Red Lists	Irl RDB	GB RL	En RL	Wl RL	Comments
Zostera noltei	LC						LC (G)		VU	VU	LC	Madden *et al*. (1993) provide details of the distribution and ecology of the species in Co. Dublin.

EXCLUDED TAXA

Table 16 lists various taxa that have not been included in this Red List analysis with reasons for their exclusion; note that taxa listed as neophytes, hybrids, non-endemic apomicts or of lower taxonomic rank than subspecies in Jebb (2014) are also excluded and, with a few exceptions, are not included in the table. The abbreviation of author names for taxa not included in Stace (2011) follows IPNI (2016).

Table 16. Excluded taxa

Taxon	Reason(s) for exclusion from Red List
Aethusa cynapium subsp. *agrestis*	Sell & Murrell (2009) list *Aethusa cynapium* subsp. *agrestis* (Wallr.) Dostál as being "common throughout East Anglia and probably other agricultural areas of Great Britain and Ireland." Its occurrence in Ireland requires investigation.
Allium ampeloprasum var. *ampeloprasum*	Green (2014) has details of its occurrence in south-east Ireland. While a neophyte introduction of garden origin at most (and likely all) of its Irish sites, the possibility that plants in coastal situations may have arrived by natural means on the tide cannot be entirely discounted. Var. *babingtonii* is considered native or alien (Jebb 2014). The assessment of *A. ampeloprasum* excludes confirmed records of var. *ampeloprasum*.
Arabis brownii	While plants of sand dunes and rocks on the west coast previously distinguished as a separate species (*A. brownii*) may deserve subspecific status (Stace 2011), these are treated at the varietal level in Sell & Murrell (2014). Further research is recommended.
Asparagus officinalis subsp. *officinalis*	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Asperula cynanchica subsp. *occidentalis*	Plants of sand dunes on the west coast, formerly distinguished as a separate subspecies (or species, *A. occidentalis* Rouy), are considered best placed at the varietal rank (Stace 2011).
Asplenium cuneifolium	Records of this species from Ireland (O'Malley 1979; Scannell 1978) and Great Britain are referable to *A. adiantum-nigrum* (Stace 2011); see Rich & Jermy (1998) and Webb & Scannell (1983) for details.
Carduus nutans	Its Red Data Book status is assessed as Indeterminate in Curtis & McGough (1988); it is now considered to be certainly introduced in Ireland (Parnell & Curtis 2012). Jebb (2014) lists it as neophyte.
Carex flava	This species and hybrids with *C. lepidocarpa* were reported from Coolagh Fen, Co. Galway (Perring 1970; Webb & Scannell 1983). However, Jermy *et al*. (1982) consider these not to be *C. flava* but, rather, morphological intermediates with *C. lepidocarpa*, and suggest that while *C. flava* had formerly occurred here it had become extinct through hybridization with *C. lepidocarpa*. Recent research has found no supporting evidence for any historical hybridization events involving *C. flava* nor, indeed, any plants of this species at Coolagh Fen, and the population here is considered to be an unusual form of *C. lepidocarpa* (Blackstock & Ashton 2010). *C. flava* is not mapped as occurring in Ireland by Jermy *et al*. (2007) or noted from Ireland in Stace *et al*. (2015).

Taxon	Reason(s) for exclusion from Red List
Carex viridula	Three morphologically variable taxa traditionally recognised in Ireland as separate species, *C. demissa*, *C. lepidocarpa* and *C. oederi*, were placed under this species at the rank of subspecies by Schmid (1983), a convenient treatment that has been followed by various authors in recent years, e.g. Parnell & Curtis (2012), Stace (1991; 1997), Webb *et al.* (1996). The three taxa are once again treated as separate species, in Stace (2011).
Centaurea debeauxii	The presence in Ireland of intermediates between this species (formerly *C. nigra* subsp. *nemoralis*) and *C. nigra* is mapped in Perring & Sell (1968). However, no records for "good" *C. debeauxii* are shown in this work nor indicated by Sell & Murrell (2006) or by Stace (2011). Parnell & Curtis (2012) note that Irish plants distinguished as *C. nigra* subsp. *nemoralis* probably do not justify their status.
Cephalanthera damasonium	The possible occurrence of this species in Co. Mayo was noted by Goodfellow (1996) who recorded "about a dozen plants in leaf". A survey by M. Wyse Jackson (21.6.2000) at the location indicated (Graham Goodfellow *in litt*. to M. Wyse Jackson, 9.5.2000) noted a population of non-flowering orchids. One plant was collected and grown on to flowering the following year, when it was identified as *Epipactis helleborine*. It is considered most likely that the other non-flowering plants noted in 1996 and 2000 are also referable to this species.
Chenopodium murale	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Chenopodium polyspermum	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Circaea alpina	Early records for this (see, for example, Colgan & Scully (1898) and Praeger (1901)) have proved to be referable to the hybrid with *C. lutetiana*. Pure *C. alpina* is considered to no longer occur in Ireland (Stace *et al*. 2015).
Dactylis hispanica	Neophyte (Jebb 2014). Stace (2011) notes that its presence in south-west Ireland as a native requires investigation.
Dactylorhiza incarnata subsp. *ochroleuca*	The possible occurrence in western Ireland of this taxon (as noted by Sell & Murrell (1996)) has not been confirmed.
Dactlyorhiza lapponica	Irish plants identified as this are included under *Dactylorhiza traunsteinerioides* in Stace (2011). See Bateman & Denholm (2012) for further details.
Dactylorhiza majalis	Stace (2011) notes that molecular evidence has demonstrated that this species [as understood when first described] does not occur in Great Britain or Ireland, and refers Irish plants identified as this to *D. purpurella*, *D. kerryensis* and *D. traunsteineroides*. There has been much discussion over the years regarding species limits and nomenclature and in the most recent Irish flora (Parnell & Curtis 2012) this species name is retained.
Erodium moschatum	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Erysimum cherianthoides	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).

Taxon	Reason(s) for exclusion from Red List
Euphorbia amygdaloides	Neophyte (Jebb 2014), probably introduced (Scannell & Synnott 1987). Subsp. *amygdaloides* is noted by O'Mahony (2000) to be naturalised in Ireland. Subsp. *robbiae* is listed as neophyte in Jebb (2014). The earliest Irish records for the species date from the 19th century (Colgan & Scully 1898).
Euphorbia lathyris	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Euphrasia marshallii	A 1992 record from Co. Antrim for this British endemic species is not included in Beesley (2006) and is considered to be unconfirmed.
Hieracium hesperium	The taxonomic status of *Hieracium hesperium* P.D. Sell, originally thought to be an Irish endemic (Sell & Murrell 2006), is reviewed by Rich *et al*. (2013a) who conclude that its maintenance as a separate species cannot be supported.
Lamiastrum galeobdolon subsp. *argentatum*	Neophyte (Jebb 2014). The native subspecies is subsp. *montanum.*
Limonium binervosum	*L. binervosum s.s.* is not listed as occurring in Ireland by Ingrouille & Stace (1986), Leach & Pearman (2006) or Stace (2011). Records of *L. binervosum* from the south and east coasts are probably all referable to *L. procerum*. *L. procerum* and *L. recurvum* are the only species of the *L. binervosum* aggregate confirmed from Ireland. *L. binervosum* is listed on Schedule 8 of the Wildlife (Northern Ireland) Order 2011.
Lotus pedunculatus subspecies	Sell & Murrell (2009) recognise two subspecies under *L. uliginosus*, the former name for this species – subsp. *uliginosus* and subsp. *vestitus* (Lange) Hansen, but note that the distribution and ecology of these is not understood. Certainly this is the case in Ireland where they have not been distinguished. They are not included in Stace (2011) and it may be that they are best treated as varieties.
Malva moschata	Neophyte (Jebb 2014); considered to be probably introduced by some authors (Scannell & Synnott 1987; Webb 1977). Praeger (1901) regards it as an escape in many of its stations, but looking native in the south-east (Cos Carlow, Kilkenny, Waterford and Wexford); in the census list included in his later work (Praeger 1934a) the species is indicated as probably introduced but "?Native in SE." Later treatements consider it to be certainly introduced (Parnell & Curtis 2012; Webb *et al*. 1996).
Melampyrum pratense subsp. *commutatum*	The possible occurrence in Ireland of this subspecies requires investigation.
Mentha spicata	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Mercuralis annua	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Myosotis arvensis subsp. *umbrata*	Two subspecies of *M. arvensis* are recognised by Sell & Murrell (2009), subsp. *arvensis* and subsp. *umbrata* (Mert. & W.D.J. Koch) O. Schwarz (var. *sylvestris* in Stace (2011)). The possible occurrence of subsp. *umbrata* in Ireland requires investigation.
Myosotis discolor subsp. *dubia*	The possible occurrence of this taxon in Ireland requires investigation. Stace (2011) considers that it deserves, at most, varietal rank.
Myosotis ramosissimas subsp. *globularis*	Sell & Murrell (2009) consider that this taxon "ought to be in Ireland"; its possible occurrence requires investigation. Stace (2011) considers that it scarcely merits varietal status.
Peucedanum officinale	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).

Taxon	Reason(s) for exclusion from Red List
Pimpinella saxifraga subsp. *nigra*	The possible occurrence in Ireland of *Pimpinella saxifraga* subsp. *nigra* (Mill) Gaudin *sensu* Sell & Murrell (2009) requires investigation.
Poa palustris	Once considered to be native (Praeger 1901), and assessed as Rare in Curtis & McGough (1988) it is now generally acknowledged to be an introduction in Ireland (Parnell & Curtis 2012; Stace 2011). Jebb (2014) lists it as neophyte.
Polygala vulgaris subsp. *collina*	The possible occurrence in Ireland of this subspecies requires investigation.
Polygonum rurivagum	The native/alien status and the occurrence of this species in Ireland are uncertain. It is listed as neophyte in Ireland by Jebb (2014) and Williamson *et al.* (2008), and archaeophyte in Great Britain (Preston *et al*. 2002; Preston *et al*. 2004; Stace 2011). Akeroyd (2014) considers it a British native but to be absent from Ireland; he notes the presence of unconfirmed records from three Irish counties.
Ranunculus parviflorus	Listed in Scannell & Synnott (1987) as probably introduced and as neophyte in Jebb (2014).
Rhinanthus angustifolius	The origin and status of plants of this species recorded from the shores of Lough Derg, Co. Galway require investigation.
Rhinanthus minor subsp. *calcareus*	Sell & Murrell (2009) and Stace (2011) note that Irish plants resembling this taxon are best placed in/probable errors for subsp. *stenophyllus*. See Perring & Sell (1968) for further details.
Rumex acetosella subsp. *tenuifolius*	Small plants with narrowly linear leaves of very dry sandy sites are referred to var. *tenuifolius* in Stace (2011). The taxon is placed at the subspecific rank by Akeroyd (2014) who notes that it is under-recorded in recent years and that all of the few Irish records are from coastal sites. The present status of Irish populations is uncertain.
Salix fragilis	Crack Willow, as traditionally understood, comprises an aggregate of several different taxa – see *Salix euxina* in Red List table for details. Archaeophyte (Jebb 2014; Williamson *et al*. 2008).
Sedum album	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Sedum dasyphyllum	Neophyte (Jebb 2014); rare garden escape (Reynolds 2002); garden escape … long naturalised on limestone rocks near Cork (Clement & Foster 1994), where Praeger (1934a) considers it to be indigenous; locally naturalised (O'Mahony 2000).
Sonchus arvensis subsp. *uliginosus*	The possible occurrence in Ireland of this taxon requires investigation.
Sonchus asper subsp. *glaucescens*	The possible occurrence in Ireland of this taxon requires investigation.
Taraxacum gotlandicum	Reported in Scannell (1975a) as new to Ireland (Co. Clare) and subsequently listed on the Flora (Protection) Order, 1980 (Statutory Instrument No. 338 of 1980); the species is assessed as Rare in Curtis & McGough (1988). Since then, however, the occurrence of the species in Ireland is regarded as unconfirmed; Dudman & Richards (1997) state that there is doubt regarding the correct identity of plants recorded in Ireland and Great Britain, a view reflected by Sell & Murrell (2006). Jebb (2014) lists the occurrence of the species in Ireland as "error". Whether correctly recorded or not, the species is not an Irish endemic and is thus not assessed in the Red List.
Ulex minor	Formerly considered to be native or possibly so (Hackney 1992; Scannell & Synnott 1972), but now generally regarded as an introduction (e.g. Day & Hackney 2004; Jebb 2014; Parnell & Curtis 2012; Preston *et al*. 2002).

Taxon	Reason(s) for exclusion from Red List
Ulmus glabra subsp. *glabra*	Native Irish plants are referable to subsp. *montana*. The possible presence of subsp. *glabra*, perhaps introduced with planted stock, requires investigation.
Valerianella carinata	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Vicia sativa subsp. *sativa*	Jebb (2014) lists the occurrence of this subspecies in Ireland as "error"; considered archaeophyte by Williamson *et al*. (2008).
Vicia sativa subsp. *segetalis*	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Vinca minor	Neophyte (Jebb 2014); considered archaeophyte by Williamson *et al*. (2008).
Viola hirta subsp. *calcarea*	Clapham *et al*. (1987) consider that "even varietal status seems dubious". A record from Co. Down is of a garden escape (Hackney 1992).
Zostera angustifolia	Included in *Zostera marina* in Stace (2011).

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